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White Pine Power Project

CULTURAL RESOURCES BASELINE

TECHNICAL REPORT

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CULTURAL RESOURCES BASELINE

Technical Report
For The
White Pine Power Project

Prepared by
DAMES & MOORE

October 1983

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SUMMARY

The White Pine Power Project (WPPP) is a proposed 1500 megawatt coal-fueled, steam-electric generating facility to be located in White Pine County, Nevada. In addition to the power generation system, the Project consists of a power transmission system, a water supply system, and a coal transportation system. As currently proposed, WPPP will be jointly owned by White Pine County and two private utilities. Project participants include eight Nevada entities and six California municipalities.

The preferred site for the WPPP Generating Station is the North Steptoe Valley Site. The Butte Valley Site and the Spring Valley Site are feasible alternatives to the preferred site. The water supply system for each site includes well fields located within the same valley except for the Butte Valley Site which will require additional well fields in North Steptoe Valley. The preferred power transmission system for each site includes two new transmission lines terminating in southern Nevada and one new transmission line terminating in or near White Pine County. The preferred coal transportation system includes a new and upgraded railroad from the site to existing railroads in northern Nevada. An alternate system includes a new railroad from the site to an existing railroad in southern Nevada.

This technical report, which includes baseline material for the WPPP Environmental Impact Statement (EIS), presents the results of field and literature studies. The technical report is intended to be a background document providing details of information summarized in the EIS. It also provides the basis for determining environmental impacts and mitigative measures.

This technical report presents baseline data on cultural resources (including Native American considerations) and paleontological resources. Data included in the compilation were drawn from previous summaries developed for the project and from existing cultural resources and paleontology site and project files maintained by the Bureau of Land Management, the Nevada State Museum, and other agencies.

A description of the culture history for the general project area is presented, detailing prehistoric, ethnographic, and historic times in White Pine County. The prehistoric section provides a synopsis of the four major periods identified for the

area: Pre-Archaic; Archaic; Fremont; and Post-Fremont or Numic periods. The ethnography section describes the Shoshonean cultural pattern as it existed during the mid-1800s when Caucasians first moved into the area. The history section describes the circumstances of Caucasian entry into White Pine County and the ensuing conflict with the native population. The history of mining is described and historic period settlement patterns are reviewed.

A paleontological overview is provided for the general project area with a focus on White Pine County. Local strata likely to be fossiliferous are identified.

Detailed cultural and paleontological resource data are presented for project sites and routes for lineal facilities. A listing and analysis of recorded archaeological, historical, and paleontological sites and the areas that may potentially be of special interest to local Native Americans is given. The results of a ten percent sample archaeological reconnaissance of each power generating site is incorporated into the discussion. Projections are made as to the relative number, location, and general content of archaeological and historical sites known and predicted to exist on the project sites and routes.

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1.0 INTRODUCTION

The construction and operation of the White Pine County Power Project (WPPP) will result in altered land utilization and population increase. These changes could impact existing cultural and paleontological resources. This technical report describes the existing cultural and paleontological resources of the region in which WPPP is proposed. The report is descriptive in nature; existing cultural and paleontological resource data developed to date (see Zeier 1981; James and Zeier 1981; and Firby and Zeier 1983) are discussed. This information will be summarized in the WPPP Environmental Impact Statement.

1.1 CULTURAL RESOURCE LEGAL CONSIDERATIONS

The most recent Bureau of Land Management (BLM) definition of cultural resources is employed in this report (BLM nd.:4-5). According to this definition a cultural resource is any location of past human activity, occupation, or use. This includes archaeological, historical and architectural sites, structures, and places. Also incorporated into the definition of cultural resources are traditional lifeway values. Included are those values of importance to the maintenance of a social or cultural group's traditional system of religious belief, or cultural practices. Such values need not be closely identified with specific locations. Whereas cultural resource properties are managed through a process of inventory and evaluation, the identification of traditional values relys on consultation with potentially affected social and cultural groups.

Legislation directed at involving federal agencies in the management of cultural resources dates began with the Antiquities Act of 1906. The Act reflects the initial federal concern for sites and objects of a historic and scientific nature and remains a relevant piece of legislation. The issuance of permits for conducting studies on certain federal lands is under authority of this Act, although the process has been modified somewhat by the Archaeological Resources Protection Act of 1979.

The thrust of present historic preservation activity is directly traceable to the National Historic Preservation Act of 1966 (NHPA). Among other things, this law requires that federal agencies give due consideration to significant cultural resources during project planning and agency decision making. The NHPA

established the National Register of Historic Places as a means of judging significance, and created the President's Advisory Council on Historic Preservation to oversee the implementation of the Act. General administrative responsibility for the program was given to the Secretary of the Interior. Participation by local government is facilitated through the State Historic Preservation Officer.

The National Environmental Policy Act of 1969 (NEPA) stipulates that effects on cultural resources be considered during preparation of environmental statements. NEPA calls upon federal agencies to identify and plan for protection of cultural resources as an element of the overall project plan. Procedures established by the Advisory Council on Historic Preservation are to be followed in such efforts.

Executive Order (EO) 11593, issued in 1971, directed federal agencies to take a leadership role in matters relating to the historic and cultural environment of the Nation. The Order expanded the responsibilities of the federal agencies in locating and evaluating cultural resources and required that policies be adopted that would contribute to their protection. This order was codified as part of the 1980 amendment of the NHPA.

Taken together, these federal laws constitute the foundation on which the present historic preservation program rests. In addition, there are other complimentary pieces of legislation and a series of regulations that have been promulgated to implement the acts and orders. These have been developed by various federal agencies involved in the cultural resources compliance process and are too numerous to be reviewed in detail here.

1.2 NATIVE AMERICAN LEGAL CONSIDERATIONS

Several federal laws and associated regulations deal with the issue of Native American consultation during the preparation of major environmental statements. The most significant of these is NEPA. Related regulations issued by the Council on Environmental Quality state that federally recognized Indian tribes should be participants in the NEPA process (40 CFR sec. 1500-1508). Specifically, the regulations state that:

1. Indian groups should be afforded early knowledge of the project.

2. They should be invited to participate in the scoping process during which issues are identified.
3. They should be invited to comment on draft and final EIS documents. These steps are required if the project will affect reservation lands.

The American Indian Religious Freedom Act deals with sacred places, animals, artifacts, and plants important to the practice of traditional Indian religious activities. The Act ensures freedom of access to sacred sites and the right to acquire and possess sacred objects. The Act states that it is the policy of the federal government to "protect and preserve for American Indians their religious freedom". Since this freedom is related to and partially dependent on the existence of the sacred sites and objects, their protection and preservation is also a matter of federal policy. An infringement on religious freedom may take the form of destroying sacred areas, plants, or animals; interference regarding access to commonly used religious or sacred areas or resources; or the introduction of visual or physical intrusions into a sacred area.

The NHPA calls upon government agencies to actively pursue the preservation of significant objects, historic and archaeological sites, and culturally important locations. The Advisory Council on Historic Preservation encourages the participation of relevant federally recognized tribes during the evaluation of cultural resource significance and the development of avoidance or mitigation alternatives.

Recent guidelines issued by the National Park Service (NPS) (Federal Register 1982a) deal with Native American consultation and involvement in NPS activities. These guidelines provide a specific statement of approach to the various Native American relationships mentioned above.

1.3 PALEONTOLOGICAL LEGAL CONSIDERATIONS

A matter of relevance to this study is the status of paleontology within the federal planning process, especially that of the BLM. Two issues are of concern: 1) the scheduling of paleontological study activities; and 2) permitting.

Geological-Energy-Mineral (GEM) resources guidelines are being developed by the BLM. Draft guidelines were developed for

the BLM by Teradata, Inc., which included a section on paleontological resource management (Firby 1982). The proposed guidelines recommend a three-phased approach to the evaluation of paleontological resources during project planning. A Class I evaluation consists of a literature review and an assessment of an area's potential to contain paleontological resources. A Class II survey entails the actual field verification of Class I study predictions and an examination of potential impact areas. Quite often, localities and fossil bearing horizons will not be recognized before a Class II survey is undertaken. Decisions regarding relative sensitivity and significance will also be made during a Class II survey. Options for the protection of paleontological resources include avoidance, or data recovery (i.e., mitigation). If the avoidance option is selected for any or all of the project facilities, then no further work is needed beyond the Class II survey.

Should it be determined that avoidance is not feasible, then a Class III action may be required, depending on the degree of resource significance. Class III actions typically consist of the recovery of significant data from a site or group of sites. The precise determination of which area will be examined is made after field examination (a Class II effort); final decisions are made at the BLM State Office level.

The second identified issue is that of permitting. The current BLM interpretation of the Antiquities Act of 1906 affords special significance to vertebrate fossils. This interpretation states that it is necessary to acquire a BLM permit (issued to a qualified individual or institution) in order to carry out a mitigation (Class III) program.

Permitting is addressed in recent BLM draft guidelines that deal with the collection of geologic and hobby minerals on public land (Federal Register 1982b). The guidelines review existing procedures regarding vertebrate and invertebrate fossils, present a simplified permitting procedure, and specify when a permit is needed. Review of the guidelines suggests that a permit will be required of the paleontologist conducting a Class III data recovery program. Such work must be conducted before construction of the project can be undertaken. No permit is required in order to conduct paleontological or geological reconnaissance or mapping activities.

2.0 SCOPE OF WORK

2.1 STUDY OBJECTIVE

The purpose of this technical report is to develop two specific classes of baseline data needed in the evaluation of WPPP facilities: cultural resource and paleontological resource data. Interests of the Native American community are incorporated into the cultural resources data set.

2.2 STUDY METHODS

WPPP lineal facilities criss-cross much of eastern Nevada. Required at this stage in the planning process is general data for the region, developed at a sufficient level of detail to allow for the ready comparison of alternative project elements. Constraints placed on the study include the following:

1. Alternative Site areas were originally defined as squares three miles on a side. Later revisions decreased this size. For consistency, the original boundaries are used.
2. Rail and power transmission corridors are two miles wide.
3. Certain proposed powerline corridors are existing and do not require evaluation. These include the Arrow Canyon, Gonder-Machacek, and Pahranagat alternates; and portions of the Lake Valley, Delamar, and Dry Lake Valley alternates and the route south of the Moapa area.

2.2.1 Cultural Resource Study Methods

Two types of cultural resource data are neccesary to meet the stated objective. The first deals with the number of sites, either known or predicted, in each project alternative. The second involves the types of sites found and their cultural affiliations. Several levels of cultural resource data have been collected in conjunction with the WPPP, including:

1. A cultural resources overview for the County (Zeier 1981) and the review of other relevant overviews (James 1981, 1982) which together provide a regional context for the project.
2. A compilation of existing data on previously recorded sites, their locations, and areas previously surveyed. Maps containing these data were prepared based on

information available at BLM offices in Elko, Ely, Caliente, and Las Vegas.

3. A model capable of predicting the density and types of sites in the County (Zeier 1981). This model is based on a series of assumptions regarding past land use by prehistoric and historic populations. These assumptions are operationalized and quantified, allowing the calculation of site types that should be present and their density by major environmental zone.
4. A limited field reconnaissance at each of the three Alternate Sites in order to acquire sample data on the number, type, and affiliation of sites present (James and Zeier 1981).

The best available data is developed for each project alternative. For the generating station sites, all four levels of data are appropriate. The characterization of lineal facilities within White Pine County can make use of the first three data sets; those outside the County the first two sets. The most recent listings of the National Register of Historic Places (USDI 1979; 1980; 1981; and 1982) were consulted to determine whether listed properties are within the bounds of project alternatives.

2.2.2 Native American Study Methods

An evaluation of Native American concerns regarding the WPPP must emphasize two related aspects. The first involves direct consultation with Indian people in whose territory project elements will be located. The purpose of this consultation is to formally introduce the project, to offer an opportunity for tribal input into the EIS preparation process, and to assess what values are attached to areas that may be impacted by the project (see Appendix). Two Native American tribal groups have historical ties to lands included in the project alternatives; the Shoshone and the Southern Paiute. Nevada Reservations and colonies located in or adjacent to the greater project region include:

* Shoshone Reserves
    - Elko Colony
    - Ely Colony
    - Odger's Ranch
    - South Fork Reservation
    - Duckwater Reservation
    - Goshute (Deep Creek) Reservation

* Southern Paiute Reserves
    Las Vegas Colony   Moapa River Reservation

Consultation with these and other Native American groups has been initiated (see Appendix A).

The second aspect involves the identification and consideration of sites or types of natural features in which Native Americans may have a continuing sacred, religious, or cultural interest. Three recent studies have attempted to assess Indian interests regarding cultural resources identification and management in the general project region (Facilitators 1980; HDR 1980; Stoffle et al. 1982). Data presented in these reports allow for the assessment of relative concern for certain types of cultural resource sites, a comparison of possible impacts, and development of mitigative measures.

Several sources of data were accessed to determine the known location of site types considered sensitive. These include BLM and Nevada State Museum archaeological site records (burials, rock art, trails, ethnographic period sites), U. S. Geological Survey maps (caves, springs, rock art), the ethnographic and archaeological literature (all site types), more specialized literature (Carlson 1974; Garside and Shilling 1979; and McLane 1974), and previous reports or listings of sites identified by Indian groups.

2.2.3 Paleontological Study Methods

Baseline data regarding paleontological resources has not previously been developed for White Pine County, although a statewide bibliography of sources relating to paleontology is available (Firby 1981). Information is required on the location of known paleontological resources and the identification of fossil-rich geological strata and deposits. Such information is not retained by a single agency or institution. Sources referenced include the aforementioned statewide bibliography, the Museum and Department of Paleontology, University of California, Berkeley; the United States Geological Survey, Menlo Park, California; and the Los Angeles Museum of Natural History, California.

The major lithostratigraphic units crossed or encroached upon by project facilities were evaluated to determine their

relative paleontological potential (Firby and Zeier 1983). The professional geologic literature and the map of Nevada with notations presented by Stewart and others (1980) were used as the basis for this evaluation.

The compilation of these data will allow for the discussion and assessment of paleontological sensitivity.

3.0 REGIONAL SETTING

This synopsis divides the culture history of White Pine County into three periods: prehistoric times; ethnographic times which deal with the Shoshonean pattern present at the time of Caucasian contact; and historic times. Consideration is also given to the regional geological setting as it relates to paleontology.

3.1 ARCHAEOLOGY

The prehistory of White Pine County can be divided into several sequent periods, each characterized by a distinct adaptation to the environmental setting in which the prehistoric group lived.

The Pre-Archaic Period represents the earliest well-documented evidence of man's presence in North America and the Great Basin. On a continental scale, the period is dominated by two sequent adaptations: the earliest, beginning some 12,500 years ago, is typified by an emphasis on the hunting of Pleistocene megafauna, and the later response by these big game hunters to the extinction of Pleistocene megafauna (known collectively as the Plano Culture). Over time, the cultural homogeneity of the earlier adaptation decreased and distinct regional cultures developed; stylistic variation in sensitive artifact types such as projectile points increased.

Of interest is that the Great Basin does not seem to follow this pattern. Typical Plano artifacts appear in conjunction with supposedly earlier fluted forms, and, in some cases, appear to be earlier. Little fluted material is known for the Great Basin and all of it is from the surface. Of the fluted forms, Clovis is more common in Nevada (Davis and Shutler 1969:157; Tuohy 1969:170) with some from Long Valley (Tadlock 1966:664). In contrast, Tuohy (1974:98) reports only three Folsom points for the state; one from Long Valley. Given present evidence, we must conclude that carriers of the earlier Pre-Archaic cultures were infrequent inhabitants of the County and the Great Basin. The attention to fluted points is probably an exaggeration of their importance when viewed against the totality of County and Great Basin prehistory. When man first entered the area, he was faced with the need to adapt to a unique environmental matrix.

It is not surprising, then, that the oldest Great Basin sites reflect a regional flavor. Early Plano assemblages are characterized by large stemmed projectile points, abundant core tools, and an assortment of scrapers and choppers (Warren and Ranere 1968; Warren 1967). Typical point styles include Lake Mohave (13,250 - 8,500 B.P.), Cascade (9,000 B.P. - 5,000 B.P.), and Haskett (8,000 B. P. - 7,000 B. P.) (Heizer and Hester 1978; Layton 1972). Bryan (1979:170) and Layton (1970) group these forms into a stemmed point tradition. Bryan proposes that the tradition first occurred in the Intermountain West and diffused to the east and north (Bryan 1979:204-205).

Later Plano manifestations in the Great Basin, the Western Pluvial Lakes Tradition (Bedwell and Cressman 1971), supposedly lasted from 11,000 to 8,000 years ago and is seen by many as transitional between the Pre-Archaic and Archaic adaptations. Projectile point styles related to the period, other than those mentioned above, include Parman (9,000 B.P. - 8,000 B.P.), Black Rock Concave Base (ca. 9,000 B.P.), and Cougar Mountain (ca. 8500 B.P.) (Clewlow 1968:144; Heizer and Hester 1978; Layton 1979:51). An artifact associated with sites of this tradition is the crescent, the function of which is uncertain. Found only in association with lacustrine or spring sites (Davis and Shutler 1969:158), Clewlow (1968:44-48) suggests they were transversely mounted projectiles specifically used to take waterfowl; Butler (1970:39) proposes they were used as knives and scrapers.

The Pre-Archaic period subsistence-settlement pattern is marked by a number of small sites along features related to extinct water sources (Davis and Shutler 1969:156; Tuohy 1969:170; Tuohy 1974:97). Sites located in Long Valley, for example, cluster where streams flowed into the pluvial lake. York (1974:13) in his study of Long Valley reports that Pre-Archaic sites are rare outside such habitats. Upland sites do, however, occur. Between 12,000 and 10,000 years ago hunters intermittently occupied Smith Creek Cave (near Baker) while involved in the hunting of mountain sheep (Bryan 1979:243).

Milling equipment is unknown for the majority of Pre-Archaic sites (Meighan 1963) suggesting that seeds were not intensively exploited. Collecting activities may have been restricted to roots, tubers, berries, and greens. Fishing is proposed as a subsistence activity (Heizer and Baumhoff 1970:7, York 1974:15) but little evidence has been found. During a

majority of the period, valley bottoms were partially dominated by conifer woodlands and prime deer and mountain sheep habitat expanded toward the lacustrine and riverine areas. Less lateral movement was required to exploit both resource areas and utilization of upland game animals may have been possible from within a lacustrine/riverine settlement pattern.

Overall, the environment during the Archaic Period was similar to that of today. Minor climatic oscillations did occur, resulting in brief periods warmer and cooler than present. The warmer oscillation was from 5100-4250 years B.P., the cooler oscillation from 3200-2000 years B.P. The warmer period corresponds with Antevs' Altithermal stage (Antevs 1948).

Technologically, the Archaic is more complex than preceeding periods. Hallmarks of the period are a profusion of milling tools and basketry. The abundance of groundstone points to an expanded exploitation of the available resource base. A technological development late in the period (ca. 2500-3000 years ago) was the introduction of the bow and arrow (Aikens 1976; Webster 1980). Projectile point styles diagnostic of the Archaic include Northern Side Notched (7000-4000 B.P.), Humboldt (6000-3100 B.P.), Pinto (5000-2700 B.P.), Elko (4000-1000 B.P.), and Gypsum (ca. 2700 B.P.) (Heizer and Hester 1978:155-160).

Subsistence during the Archaic was more diversified and is characterized by the concurrent or, often, serial exploitation of seasonally available resources. Emphasis was placed on the most reliable and plentiful resource. While the overall pattern is one of greater subsistence diversity, there were, in some places and at some times, abundant localized resources which allowed a fair degree of sedentism. A preference for water related resource areas appears evident in such cases. During the "warmer" period, such areas were at a premium. A level of desiccation slightly greater than present prevailed, and a minor upward shift of vegetational zones occurred. In portions of the eastern Great Basin, this fostered a change in the Archaic subsistence pattern; more effort was directed toward upland resources (Simms 1977) and pinyon pine may have been utilized for the first time (Madsen and Berry 1975). On the other hand, Winter (1976) suggests that extensive collection of grasses was not typical of the Archaic period, because of limited distribution and density.

The cooler Archaic period saw an increase in the utilization of water related resource areas and of pinyon. Evidence indicates that this was an optimum period accompanied by a general population increase; many sites are occupied for the first time ca. 4000 years ago. Projectile point styles typical of the time (Elko in particular) are far more common than earlier styles. Amy's Shelter is an example of this trend. Located near the mouth of Smith Creek, the site was occupied over the last 4500 years with the heaviest use from 3000 to 2000 years ago.

The Archaic pattern prevailed until 1300 years ago. At that time, Fremont groups moved into the eastern part of the County. This dual occupancy by Fremont and Late Archaic peoples continued until 650 years ago when both cultures were replaced by Shoshonean groups. Two sites in the County reflect this pattern. Amy's Shelter, discussed above, is a site whose Archaic period use was terminated by a Fremont occupation tentatively dated between 950 and 750 years ago (Gruhn 1979:151). Newark Cave, located in Newark Valley, was intermittently occupied from 5500 years ago to at least 600 years ago. No Fremont occupation is present; Archaic groups occupied the cave until displaced or assimilated by Shoshonean peoples (Fowler 1968a; 1968b).

Circumstances relating to the origin of the Fremont Period are far from certain. Hypotheses include in situ development, population expansion out of the southwest, and development in the Colorado Plateau with subsequent diffusion into the Great Basin (see Aikens 1972; Jennings 1978; and Madsen and Berry 1975). Partially dependent upon horticulture, Fremont did not spread throughout the County, but was apparently halted by the presence of high, dry areas such as Butte, Long, and Newark Valleys.

The material culture of Fremont is quite distinct from other cultural periods. The most obvious indicator of the period is pottery, the earliest in the County. Named pottery styles include Snake Valley Gray, Snake Valley Black-on-gray, Snake Valley corrugated, and Paragonah coiled (R. Madsen 1977). The basketry industry of Fremont is also distinctive (Adovasio 1980:39-40). Pictographs dating to Fremont times are abundant and very stylized. A common motif is the triangular bodied anthropomorphic human figure (Schaafsma 1971). Projectile point types typically, although not exclusively, associated with Fremont sites are the Eastgate and Rose Spring series (1300-700 B.P.) (Heizer and Hester 1978:160-163). It is possible that

these types date back to, and are associated with, the introduction of the bow and arrow (ca. 2500-3000 years ago).

Fremont subsistence activities are more varied than those of previous periods with the addition of limited horticulture focusing on corn, beans, and squash. The level of dependence on cultigens is regionally variable; the relative mix of horticulture, gathering, and hunting being determined by local environmental parameters (Madsen 1979; 1980). Faunal evidence suggests that mountain sheep hunting was more important during Fremont times than any other period of prehistory (Pippin 1979:337); bones of the animal are more frequent in Fremont sites (Winter 1976:422). Pippin (1979:338) notes a distinctive butchering pattern that first appears during Fremont times. The hunting of aquatic avifauna also seems to have been emphasized.

A factor relating to Fremont subsistence is the abundance of grasses in the eastern Great Basin. Winter (1976) proposes that little use was made of grasses before the advent of the Fremont culture. Expansion of grasslands is proposed to have occurred 1500 years ago (Aikens 1970; Winter 1976); minor climatic shifts are cited as the cause. As evidence, he relies on coprolite analyses from Danger and Hogup caves in Utah. Pre-Fremont coprolites show little or no use of grasses, later coprolites do. Winter (1976) states that the expansion of grassland conditions allowed for the spread of Fremont which was primarily dependent on the collection of grasses and secondarily on horticulture.

Settlement during Fremont times was typified by sedentary villages located on well-watered alluvial fans which had natural stands of grass and were conducive to the planting of small gardens (Madsen 1979). Fremont village sites are unique in eastern Nevada due to the presence of masonry or adobe structures (Lohse 1980). The western-most distribution of Fremont village sites in the County is uncertain. At present only two Fremont village sites are recorded, both in Snake Valley (Taylor 1954).

At approximately the same time as the Fremont in Utah and the County, another cultural experiment was underway farther south in Clark and Lincoln Counties. Sites of the Virgin Branch Anasazi are most common in the lower Moapa Valley along the Muddy River, the lower Virgin River, and Meadow Valley Wash. Outside of this area, Anasazi material has been found at Conaway and O'Malley Shelters (Fowler et al. 1973), Etna Cave (Wheeler 1942),

Gypsum Cave (Harrington 1933), Stuart Rockshelter (Shutler et al. 1960), and Valley of Fire (Shutler and Shutler 1962).

Shutler (1961:67-68) breaks the Virgin Branch Anasazi period into four phases. The first is the Moapa Phase (300 B.C. to A.D. 500) which is not well known. It is represented by some pithouses on high bluffs above Moapa Valley and cultural deposits in several rockshelters in the region.

Muddy River Phase (A.D. 500 to 700) sites consist of small clusters of pithouses situated on valley rims and on low knolls. Pottery appears for the first time. Types found include Boulder Gray and Logandale Gray, Boulder Black-on-gray, and Lino Black-on-gray. Other artifacts found include the bow and arrow, slab and basin metates, and coiled and twined basketry. Subsistence is based on a mixed farming and hunting-gathering economy.

The Lost City Phase (A.D. 700 to 1100) is characterized by many of the same traits as the preceding phase. Small villages consisted of dwellings in a U-shaped arrangement or in rows. Cultivated crops included corn, beans, and squash. However, reliance was placed on the use of wild plant and animal foods. Cotton was grown and woven into cloth. The Mesa House Phase (A.D. 1100 to 1150) was short-lived and represents the end of Virgin Branch Anasazi occupation of the region. Material traits are essentially the same as those of the preceding phase.

The Post-Fremont or Numic Period represents the prehistoric forebearer of the modern inhabitants of the Great Basin. It is assumed that the subsistence and settlement pattern of the Post-Fremont population is the same as that of the historic Shoshoni. Steward's 1938 monograph on the central Shoshoni is accepted as the basis for extending the historic patterns back into the immediate prehistoric past. Based on linguistic (Lamb 1958) and archaeological (Madsen 1975) evidence, it is proposed that a gradual immigration of the new culture took place from 950 to 650 years ago (Post-Fremont sites appear in the County around 750 years ago). What followed is uncertain. Sites in the County that contain evidence of Fremont and Post-Fremont occupations suggest alternating or co-habitation over a brief period of some 100 years (Aikens 1970; Euler 1964; Madsen 1975). The relationship between the Post-Fremont and the earlier Archaic culture has not been addressed in the literature. Given the similarity of their adaptation, the Archaic groups may have been simply assimilated

into Post-Fremont culture patterns. By 650 years ago, the Post-Fremont culture was the only one found in the area.

3.2 ETHNOGRAPHY

At the time of first contact, the County was inhabited by several small groups of Shoshoni Indians. All spoke closely related languages of the Uto-Aztecan language stock. The term Numic is used when referring to Great Basin languages of this stock (Goss 1968; Lamb 1958). Central Numic, or Shoshonean, speakers inhabited the County. The southeastern most corner of the County borders on the southern Numic area.

Subsistence activities among the Western Shoshoni were diversified and a close familiarity with the region and its resources allowed the scheduling of food gathering so as to maximize yield; randomness and idle wandering in search of food were not part of the pattern (Inter-Tribal Council 1976:5).

Gathering activities were organized according to season. Spring found the most extensive use of greens and tender roots in marsh, spring, or riverine environments. These were eaten raw, boiled, or roasted in the ashes of a campfire. Early summer saw the ripening of grasses and seeds were collected in large conical baskets, carried back to camp, threshed, and winnowed. While some were eaten raw, most seeds were ground and made into a mush or gruel. Cakes of this mush were often baked. Seeds not used were stored in baskets placed in subterranean pits. The maturation of grasses could be followed upslope into and above the pinyon-juniper belt as the summer progressed. Later in the summer berries and tubers became an important addition to the diet. Berries were most plentiful in wooded areas along mountain streams or springs. Tubers had a more dispersed distribution.

In the fall, emphasis turned to the gathering of pinyon pine nuts, an important resource that formed the basis of the winter diet. During the summer, careful attention was given to where the pine nut crop was going to be plentiful. Collection usually took place in the early fall around the time of the first frost. The nuts were eaten whole, ground into a flour, or stored. Rather than transport them any great distance, storage took place where they were gathered. Hoffman (1878:475) reports that circular stone cairns were used for this purpose. Nuts stored in this fashion could last up to two years without spoiling (Steward

1938:27). These caches were usually depleted by the end of winter, however, and long term surpluses were not developed. Little to no gathering took place during the winter months.

Steward (1938:33) suggests that gathering was the most important element of the overall subsistence pattern, and was largely responsible for the location of the camp group at any given time. Hunting activities appropriate to the season and locale were undertaken. As a result, hunting activities were less scheduled and not as patterened. Everything from mountain sheep to insects was sought out and exploited. The only class of animals avoided was the carnivores (Steward 1938:34). Steward (1955:104) suggests that smaller animals such as rabbits, mice, snakes, lizards, and insects formed a larger part of the hunters take by volume than did big game. Reliance on fish was restricted to areas with perennial streams, lakes, or marshes. Fishing activities took place in the spring or early summer.

The only real deviation from this gathering oriented settlement pattern was the communal hunt. Even this activity, however, usually took place in the late summer or early fall when the gathering schedule was the lightest and most opportunistic. The summer's collecting had reached an end and it was not yet time to move to the pinyon groves. Antelope and rabbits were the sought after prey during communal hunting activities. These hunts were sophisticated undertakings requiring a high technological investment. Accounts of rabbit drives are provided by Simpson (1869:52), Egan (1917:235), and Steward (1938:38-39), while Egan (1917:238-239) and Patterson et al. (1969:6-7) discuss antelope drives. Communal hunts were conducted by members of several camp groups who congregated specifically for that purpose. Cooperative hunting efforts on the part of several individuals from the same camp group were also quite common.

Horticulture was not practiced by the Shoshoni. They did, however, try to enhance the production of certain native plants. The deliberate sowing of wild seeds (primarily chenopodium and mentzelia), conducting burns to encourage the growth of grasses, limited irrigation, and modifying stream channels to facilitate fishing are all examples (Downs 1966). Horticulture was adopted by some Indians in Spring and Steptoe Valleys during early post-contact times (Steward 1938:122, 128), but this is thought to reflect white influence on Indian households. At no time did Indian camp groups take up the practice.

The minimal social and economic unit among the Western Shoshoni was the household; consisting of the married couple, their children, and often a grandparent or unmarried relative. Marriage at a young age (mid-teens) was common and the couple usually resided with parents of the wife until the first child was born. At that time, the young family was free to realign its association. People were generally married throughout their adult life and polygamy was an acceptable, but uncommon, practice. Marriage bonds were enduring, creating a strong matrix of close relationships. The importance placed on maintaining inter-family relationships is attested to by the prevalence of the levirate and sororate. Divorce and wife abduction did occur, however, resulting in the recombination of kinship alliances.

Several households typically functioned together, forming a camp group; the effective social and economic unit. Historic camp groups in the County included from two to eleven households (Steward 1938:121-131, 145-147); the average was four. To the extent possible, a camp group went through the yearly subsistence cycle as a unit, breaking up into smaller groups or households only when necessary. At a minimum, the camp group tried to winter together. Each camp group had a generally defined home territory over which they held certain rights (Fowler 1980). Changes in this pattern during the historic period are discussed by Clewlow and Pastron (1974).

Roles of political leadership were weakly developed among the Western Shoshoni. Within the household the eldest male performed the role of coordinator. Camp groups usually recognized a headman. This was not truly a leadership position in that people within the group were not bound to obey him. Chosen because of his broad ranging experience, the headman served as a "talker", keeping others informed of events and resource availability (Steward 1938:247). Situations in which a leader had sanctioned powers were restricted to event oriented situations such as communal hunts, dances, and ceremonies.

Warfare was not a prevalent feature of Shoshoni life; family feuds and revenge were the sole expressions of such activities. Both were the affair of the family or the household. Camp groups or larger aggregates did not draw together for the purpose of organized warfare. This situation changed historically when, for a brief period between 1850 and 1870, horse mounted, predatory groups were formed and raids were undertaken.

With regard to religious beliefs, the Shoshoni did not draw a distinction between secular and sacred facets of life. A firm division of time into past, present, and future was likewise absent. The spirit world is not removed from the everyday activities of the individual or group; it is omnipresent. Because of this, Indians view the environment as sacred due to its association with the spirit world. Parts of the environment are more sacred than others (burials, caves, rock art, and thermal springs). Mountain ranges, sites of recent historic significance, trails, ceremonial sites, lakes, and traditional use areas have a more general, non-specific sacred association.

Burial of the dead was a matter of great concern to the Shoshoni and burial places are very sacred. Several burial patterns are known. Snake Creek and Lehman caves are examples of a practice which called for bodies of the deceased to be deposited in caves, the entrances to which were often blocked up (Roziare 1964:15; Taylor 1954:13). Interment in the ground was also a common pattern; cairns of rock covering the burial (Lowie 1924:282: Steward 1941:257). The Goshute are known to have deposited corpses in springs (Simpson 1876:48). Other patterns included burial in talus slope rock cairns, and the burning or abandonment of houses in which the deceased had been left.

In contrast to many parts of the country, a majority of contemporary Native Americans in Nevada and Utah occupy lands once held by their ancestors. This contributes to a strong sense of continuity with the past and accentuates the tie between modern Indians and traditional beliefs, practices, and resources. Although they have adopted many non-traditional technologies and patterns, contemporary Native Americans have not modified their views on the sacred nature of their ancestral lands. Indians feel that the universe is based on the principle of reciprocity and that continued modification of the natural order cannot help but result in a negative reprisal of one form or another.

During aboriginal times, Native Americans in the County were dependent on the exploitation of wild plants and animals. Continued use of the flora and fauna in a traditional manner is seen as an important element in the maintenance of cultural identity. Many species used aboriginally for manufacturing, food, and pharmeceuticals are now restricted in distribution or have disappeared totally. Despite these changes, many traditional patterns of use persist. For many local Indians,

hunting and gathering contributes significantly to their diet, and access to procurement areas is a sensitive issue. An example of such a situation is the gathering of pinyon nuts each fall.

Aside from their role in providing sustenance, plants and animals form a major part of Indian cosmology. Animals in particular are assigned human-like qualities and often serve as go-betweens with the spiritual world. Animals also play a vital role in the mythology and folklore of Native Americans and many species, though not sought as food, are still of significance. As a result, Indians have a strong religious tie to the floral and faunal aspects of their environment.

3.3 HISTORY

The first Caucasians to enter northeast Nevada were fur trappers who arrived between 1826 and the mid-1830's (Patterson et al. 1969). The County was largely untouched by these activities since the focus was further north along the Humboldt River. Jedediah Smith and a small company of men traversed the County in 1827. This crossing was quick and during his sojourn Smith camped twice, once near Conners Canyon in the Schell Creek Range and the next night north of Baker (Morgan 1953).

The County largely escaped the influx of people fostered by the transcontinental migration during the 1840's and 1850's. Only the Hastings Cutoff, established in 1846, cut diagonally across the northwest corner of the County. Few emmigrant wagon trains took this route; the most noted, and effectively the last, was the Donner party. Subsequent wagon trains were hesitant to use the cutoff due to the fate of the Donner party.

During these early years, transcontinental freight and passenger routes had passed to the north and south of the County. A shorter route was sought and by 1855, Howard Egan had pioneered a central route which ran through the County (see Figure 3-1). Major Chorpenning moved his Jackass Express, a federally sponsored mail and freight service, to this route in 1858 (BLM 1975). In 1859, Captain Simpson traversed sections of Egan's route during his topographic survey and recommended it as an alternative to the northern and southern routes (Elliott 1938).

The new central route quickly developed as a major transportation and communication corridor. The Butterfield

Overland Mail Company began to use the route and in 1860 Pony Express riders joined the entourage, necessitating the construction of several new stations within the County. The first transcontinental telegraph line, completed in 1861, also followed the central corridor. The corridor's role as a major transportation artery, declined in 1869 with the completion of the railroad through the Humboldt valley.

The 19th century was a period in American history marked by an expansionist philosophy with the federal government assuming the role of explorer. Several surveys were commissioned to gather information about potential or newly acquired territories. The first expedition to reach the County was the 1845 journey of Captain John Fremont (Elliott 1938). Searching for possible railroad routes, Fremont passed through the northwestern corner of the County. The Fortieth Parallel Survey, with Clarence King acting as expedition head, was undertaken from 1867 to 1872. The goal of the expedition was to study the geology, soils, climate, botany and zoology along the fortieth parallel from the Sierra Nevada to the great plains (Bartlett 1962:146). King's crew spent two months at Fort Ruby summer of 1868, but focused most of their attention toward the Ruby Mountains and Ruby Marshes in Elko County. The most ambitious effort was a survey directed by Captain George Wheeler to develop topographic information on the area west of the one hundredth longitude (Bartlett 1972:340). Begun in 1871, the project was to take 15 years. Congress, however, cancelled the project in 1878. In a collateral action, it created the U. S. Geological Survey and charged it with the coordination of all governmental survey activities.

The history of Indian-White relations in the County is similar to that recorded elsewhere in the Great Basin. Trappers and explorers were looked upon as curiosities; Indians were friendly and co-operative. Soon, however, Indians became alarmed by the environmental exploitation practices of this small group of intruders. A policy of avoidance was soon adopted by Indian people. Slowly, the number of whites increased and in 1849 the dam broke. The gold rush to California was on and the Humboldt River Valley across northern Nevada served as the freeway. The level of habitat destruction reached such proportions that continued Indian subsistence in the area was a struggle. Indians began to organize for the purpose of retaliation and reciprocal acts of violence became commonplace (Rusco 1976).

The year of 1860 is significant in that it represents the first occurence of broad scale hostilities against whites. The opening shot was fired near Pyramid Lake in northwestern Nevada. Open warfare broke out, focused on the northern (Humboldt) and central transportaion corridors. Pony Express and stage stations were attacked and burned, agents killed, and stock driven off. Over a period of 4 months, several small skirmishes took place in the County. The Butte Valley, Egan Canyon, and Schell Creek Pony Express stations were attacked (see Figure 3-1).

In response to hostilities, the military was sent in to build and garrison Fort Ruby along the southwestern edge of Ruby Marsh (Patterson et al. 1969:100-111, BLM 1973). The purpose of the fort, built in 1860, was to ensure the safety of the overland route and deal with any Indians that threatened it (Mack 1936:321). Little is known about Fort Schellbourne, the other military post in the County. Troops camped at the Schell Creek stage station in 1862 and were transferred elsewhere a few years later after hostilities had subsided. The period of military presence in the County coincided with the Civil War and troops which manned western forts were not Regular Army but volunteers. Forts Ruby and Schellbourne were garrisoned first by California and later Nevada volunteer militia units (Mack 1936:321).

As the military presence began to be felt the frequency of hostilities subsided. In many parts of the Great Basin, Indians and whites returned to the writing of treaties (see Forbes 1967; Rogers 1934). For their part, Indians agreed to cease all hostile actions, to allow total and free access to areas they previously had occupied, and to move to reservations. In return, the federal government agreed to set aside reservation lands and provide limited monetary support for a specified period of time. The interpretation of these treaties and whether their terms were discharged by the government remain current legal issues.

A second and final period of hostilities appears to have been restricted to the County and western Utah. Beginning in March of 1863, Goshute Indians attacked several stages and stage stations from Schell Creek east. In response, a cavalry unit from Fort Ruby was sent into the area. They located an Indian camp in Duck Creek Valley, and on May 5, 1863, attacked and killed 24 people. The next day, the cavalry unit moved over the Schell Creek Range, located and killed 23 more Indians near the present Cleveland Ranch (see Figure 3-1). In August, an infantry

company attacked a camp located 20 miles north of Cherry Creek (in Elko County) and killed 5 Indians. That fall, the Goshute ceased hostile actions (Angel 1881:183; Elliott 1938:62-63).

Mining has, without a doubt, been the most historically significant industry in the County; White Pine has produced more mineral wealth than any other county in Nevada. Some 37 mining areas are recorded; 27 organized districts, 7 unorganized districts, and 3 mining areas not formally named (Smith 1976:39). Production through 1969 exceeded $1.1 billion (Smith 1976:36) of which over 95 percent came from the Robinson District, the highest producing district in the history of Nevada. Besides Robinson, seven other County districts have produced more than $1 million worth of mineral wealth: White Pine, Cherry Creek, Ward, Osceola, Taylor, Shoshone, and the Aurum districts (see Figure 3-1). Mining in the County can be divided into two periods, the pre-1890 silver period and the post-1890 copper period.

Mineral deposits were first discovered in the County somewhat by accident. The discoverers were not prospectors in the true sense, but station masters and soldiers. In 1859 employees of the Overland Stage Company discovered silver and gold ores in Pleasant Valley (Smith 1976:52). The Eagle District was formed but no development took place at this time. A few years later in 1861, a company of volunteer soldiers on their way from Fort Schellbourne to Fort Ruby discovered a gold-bearing ore in what was known as Gold Canyon, later to be renamed Egan Canyon. The Cherry Creek district was formed in 1863 and eastern Nevada's first mill was constructed in 1864. Limited exploration was also undertaken elsewhere in the County and five new districts were defined: Kinsley (1862), Monte Cristo (1865), Pinto (1865), Newark (1866), and San Francisco (1866). The Pinto and Newark districts relate to exploration activities associated with the boom in Eureka and of the other three, only Monte Cristo (located on the west side of Mt. Hamilton) showed any promise. A company was formed and a mill constructed in 1866.

In 1867, with the assistance of a local Indian, silver ore was discovered east of Monte Cristo on Treasure Hill. This led to what was probably the shortest (1868-1870), but most intense rush in the history of the west. Over 13,000 claims were staked, 30,000 people came to the District, and several towns bolted into existence. In the early 1870's the mines began to play out and

people started to leave. By 1873, the district had produced over $8 million in silver (University of Nevada 1943).

Two districts became known for their placer gold operations. Osceola, discovered in 1872, was mined up to the turn of the century and intermittently since then. During the 1880's and 1890's, hydrologic methods were employed; ditches and flumes some 30 miles in length supplied the needed water (Vanderburg 1936:167). Discovered in 1869, the Bald Mountan district in the northern end of Newark Valley was also the scene of placer gold mining. Never very productive, the area was mined primarily by Chinese using small-scale operations (Vanderburg 1936:166).

With the influx of so many people, exploration of the County increased, especially when Hamilton began its decline. In 1875, the Ward District, located west of southern Steptoe Valley, became the focus of mining activities and its boom lasted for some 5 years. With its demise of, people moved on. Cherry Creek (1880-1883) and Taylor (1881-1885) absorbed them, blossomed, and withered. With their passing went the silver mining period.

It has been said that the silver period in the County produced more excitement than money (Elliott 1938:43). The total value of minerals extracted up to and including 1890 was $14,783,421. In contrast, the Comstock region in western Nevada realized that much or more in each of 6 separate years during the same period.

Gold and silver were the minerals sought during the 19th century, but as high grade ores diminished, the pendulum swung in the direction of high-volume, low-grade mineral ores. In Nevada, the most important of these was copper. Recent figures show that copper mined since the turn of the century is equal in value to that of all the silver and gold ever produced in the State (USGS 1964:81). The County has played a primary role in this saga, yielding 82 % of the State's copper wealth.

The copper period has been dominated by a single district: the Robinson or Ely district. First organized in 1868, production was limited up until the turn of the century. With the development of its huge copper deposits, Robinson became the richest and most consistently producing mining district in the State. Over time, it surpassed the Comstock, Goldfield and Tonopah in the value of ores produced (Hulse 1971:189).

Miners first became aware of copper in the Robinson district in the early 1870's but the extent of the deposit was not known. Exploration activities did not begin until 1903 when D. Bartly and E. Gray mapped the area. The depth and volume of the lode were thereby established. The profitable extraction of this copper presented a series of technological challenges to the miner. Equipment and procedures had to be developed to facilitate the removal of large volumes of overburden and ore. Copper ore is not easily transformed into metal and sophisticated refining methods had to be developed. Finally, a transportation network had to be present that could handle the large volumes of raw ore and get the refined product to market.

Encouraged by the results of Bartly and Gray, entrepreneurs and miners began converging on the greater Ely area. The town blossomed. An early arrival was Mark Requa, manager of the Eureka-Palisades railroad. Requa hoped to construct a branch of his railroad from Eureka to Ely. He bought out Bartly and Gray, founded the Nevada Consolidated Copper Company, and immediately initiated underground exploration of the lode and built a small experimental concentrator (Smith 1976:66). Field studies showed the Eureka to Ely rail connector to be unfeasible and in 1906 Requa built a rail line north from Ely through Steptoe Valley connecting with the Central Pacific at Cobre. The Nevada Northern Railroad is still in intermittent use and is the best existing representative of the State's early railroad history.

Shortly thereafter, Guggenheim financial interests purchased the Nevada Consolidated Copper Company and began construction of a mill, reduction plant, and processor at McGill. The McGill smelting facility came on-line and began production in 1908 (Hulse 1971:192). By this date, the technological challenges mentioned above had been conquered. The Nevada Northern provided convenient transportation and refining processes had been developed and integrated into the McGill plant. Introduction of the steam-powered shovel and the churn drill made large volume open pit mining practical (Smith 1976:66). Operations continued until 1978 when open pit operations were terminated.

Many districts organized during the silver period continued to be worked. The Aurum, Cherry Creek, and Osceola districts each enjoyed a temporary resurgence. Silver and gold continued to be the focus of attention. Several new mining districts were organized over the term of the copper period, the majority of

which yielded very little. These secondary districts, both new and old, were developed during two short-lived, post-1900 mining booms. The first occurred between 1910 and 1920, the second from 1935 until the onset of World War II.

The history of white settlement in the County dates back to the early the 1860's. Ruby and Egan stations are cited as the earliest settled areas in the County (Elliott 1938:3-4). Pleasant and Antelope Valleys in the northeast corner of the County were the location of the earliest ranching activities (Patterson et al. 1969). The first settlements of consequence owed their existence to the White Pine district mining boom and included the towns of Monte Cristo, Hamilton, Eberhardt, Shermantown, Swansea, and Treasure City. During this boom period (1868-1873), over 30,000 people resided in these communtiies.

As new mining districts developed, communities formed. People from waning districts moved, following the ebb and flow of mining operations. When a district died, so did the communities. A few communities are exceptions to this pattern. Mining districts that were small but steady producers came to support stable hamlets. Ely (first known as Murry Creek) and Cherry Creek reflect this pattern. Settled in the 1860's and 1870's, these towns have grown and dwindled, but they have persisted through even the leanest of times.

In comparison with mining, agriculture has played a smaller role in the development of the County. Few communities have come into being to support this industry. Not until the 1890's were settlements such as Lund, Preston, and Baker established. Of significance is that this was a time of marked expansion in both the ranching and agriculture industries.

The turn of the century marked a transition in the history of settlement in the County. The prime mover in this transition was the shift to copper mining. The capital investment required was high and large corporations became dominant early on. McGill, Ruth, Kimberly, and Veteran all developed as "company towns"; planned communities built and run by the company for the convenience of itself and its employees. Life in the company town had its dull moments; companies did not allow gambling, the sale or consumption of alcohol, or prostitution. As a result, "saloon towns" sprang up. Ragtown, Riepetown, Smelterville and Steptoe City fell into this infamous category (Elliott 1973:227).

Many of the more colorful events in early 20th century County history took place or relate to these raucous little towns.

A further distinction can be drawn between settlements of the earlier and later mining periods in regard to their ethnic composition. Silver period towns were made up largely of immigrants from northern Europe (Shepperson 1970:40-41). This trend shifted, however, and the immigrant work force during the early years of the copper period was from southern Europe and Asia. The Guggenheim Corporation transferred Greek, Japanese, Italian, Korean and Mexican workers to Ely from their Utah operations. By 1910, almost 10 percent of the County population had been born in Greece (Shepperson 1970:127).

Agriculture and ranching began in the County as support industries, supplying commodities to isolated mining communities. Initial development took place between 1865 and 1875. Hulse states that by the end of this period "nearly every life-giving stream big enough to support a garden and a field of hay had been claimed" (Hulse 1971:156). Favored spots were at canyon mouths, spring sites located along the base of the mountains, or on pediments that ring the valley. By the mid-1870's, ranching and agriculture had reached a developmental plateau (Creel 1964). Products were not in as great a demand as before and the lack of affordable transportation to outside markets curtailed the development of more sophisticated operations.

Droughts and harsh winters had a pronounced effect on the early direction of the ranching industry. In 1879 and again in 1889, severe weather took a heavy toll in cattle. Rather than reinvest in cattle, many ranchers turned to sheep. By 1890, the number of sheep in the County had tripled. Over time, the sheep industry far exceeded cattle in importance. Indeed, when mining was in decline between 1885 and 1907, what prosperity the County enjoyed centered on the sheep industry (Sawyer 1971).

Perhaps the best known sheep outfit of the period was the McGill-Adams operation. Jewett Adams and William McGill were both attracted to Nevada by the lure of the Comstock. After several years, McGill came to Steptoe valley. Beginning in 1885, he acquired land and water rights, soon becoming one of the largest land holders in eastern Nevada. Adams, after serving as Nevada's governor from 1882-1886, returned to his sizable cattle buisness. Longtime friends, the two discussed their independent decisions

to invest in sheep. In 1894, they consolidated their operations and jointly ventured into the sheep business. Their dynasty lasted up into the 1930's when new federal grazing regulations and the nation's depression forced its demise.

3.4 PALEONTOLOGY

The earliest geological evidence in White Pine County is the late Precambrian McCoy Creek Group of quartzites and schists found in the Cherry Creek, Egan, Schell, and Snake Ranges. From Precambrian until early Mesozoic time (the Paleozoic Era), east central Nevada was part of the Cordilleran miogeosyncline, a subsiding trough in which deposits accumulated. The 30,000 to 40,000 feet of material representative of this period contain shallow marine deposits; carbonates, limestones, siltstones, and sandstones (Hose and Blake 1976). Cambrian Period strata of significance are those recorded as containing trilobites (ie., Prospect Mountain quartzite, Pioche shale, Eldorado dolomite, Secret Canyon shale, and the upper zone of the Dunderberg shale). Strata dating to this period are assigned a high rating value due to the relative importance of these fossils, where present.

Several other strata of the Paleozoic Era are rated as having moderate paleontological potential. The Ordovician Poqonip group, for example, contains a number of marine invertebrates (mostly mollusks and algae). Devonian Period fossil bearing strata include the Simonson dolomite (contains Stromatopora and Amphipora) and the Guilmette Formation (contains those species found in the Simonson dolomite plus Cladopora sp., Actinostroma, Amphipora, Trupetostroma, and abundant corals) (Hose and Blake 1976). The Joana Formation is the only unit in the County dating to the Mississippian Period which appears to be highly fossiliferous. It contains abundant corals, brachiopods, mollusks, and crinoids.

Permian Period strata contain the majority of paleontological resources to be found in the County and most localities recorded to date are from such strata (see Appendix B in Firby and Zeier 1983) (see Figure 3-2). The early portion of the period (includes the Ely and Riepe Spring limestones) is marked by an abundance of marine plants and animals (Rugosa corals, brachiopods, mollusks, bryozoa, gastropods, fusulinids, crinoids) and contains the type locality for Komia eganensis and Caninia hanseni (Hose and Blake 1976). The later Permian fossils

are most abundant in the Arcturus Formation (mollusks, corals, brachiopods, fusulinids, gastropods, echinoid spines) and the Gerster limestone, the upper most portion of the Park City Group (the same as found in the Arcturus Formation plus the distinctive brachiopod Punctospirifer pulcher).

Few Mesozoic Era strata are found in the County, although they are present to both the north and south. Localized metamorphism was taking place in the Ruby and Snake Ranges during the Jurassic Period (Stewart 1980:79-80). The first evidence of tectonic activity appears at the beginning of the Cretaceous Period (Hose and Blake 1976).

The Cenozoic Period is most noted for two major episodes of tectonic activity. The older, of Oligocene age, is prevalent in north-eastern Nevada. The second and younger episode seems to coincide with the beginning of Basin and Range faulting during the Miocene Epoch and was focused more in the central and southern portions of the State. By the end of the Tertiary Period, the Basin and Range physiographic province had been roughly formed. Evidence of only limited sedimentary deposition exists in the County for the Cenozoic Era. Most of what is present dates to the Miocene Epoch when infilling of the deep structural and sedimentary basins developed as a result of when block faulting began to take place. Although limited in extent, these deposits are rich in paleontological deposits and are assigned a high paleontological rating value. Present in the younger sedimentary and volcanic rocks are the Horse Creek Spring local fauna (Brachycrus sp., Michenia sp., Procamelus sp.) and the Willow Grove local fauna (Hypolagus sp., Leptocyon sp., Aelurodon savius, Pliohippus sp., Merycodus furcatus, Procamelus sp., Megahippus sp., Michenia sp.) (Hose and Blake 1976).

The Quaternary Period of the Cenozoic is most noted for oscillations in climatic conditions which resulted in the development and advancement of large sheets of glacial ice and related pluvial lakes (direct and indirect evidence of glacial activities are present in the County [Blackwelder 1931]). Deposits dating to this period consist of a variety of alluvial deposits, none of which holds much potential for paleontological resources and, therefore, are assigned a low rating score. Only the rare occurrence of now extinct Pleistocene mammals will serve to increase this low level of significance.

4.0 SITE ARCHAEOLOGY, HISTORY, AND PALEONTOLOGY

The location of the three power generation system sites is shown on Figure 4-1. Throughout the discussion of archaeology and history, the term "site" is used frequently. In order to avoid confusion in this chapter, "Site" (capitalized) will refer to the Butte Valley Site, North Steptoe Valley Site, and the Spring Valley Site while "site" (not capitalized) will denote locations of archaeological or historical importance.

4.1 BUTTE VALLEY SITE

The Butte Valley Site is situated on the southwestern edge of Butte Valley in the north central part of White Pine County (see Figure 4-1). The site slopes gently to the northeast, facing Egan Canyon some 16 km away. Robbers Roost Ridge is immediately to the west. Hills are present along the western edge of the site with alluvial fans extending out onto the valley floor. Vegetation in the area is characteristic of the sagebrush zone in the Great Basin. There is a slight degree of variation, however, between the lower area and the hilly and alluvial area. While sagebrush is present throughout, budsage and shadscale are more prevalent in the lower section, and large patches of winterfat are found in the central portion.

4.1.1 Archaeology And History

Prior to WPPP, very little archaeological survey work had been undertaken at the Butte Valley Site (see Table 4-1). Most efforts were limited; oil drilling locations, water well locations, and seismic lines. Small WPPP surveys include the inspection of a meteorological monitoring station and five geophysical test locations. Only one of these surveys resulted in the discovery of cultural remains: a small lithic scatter located to the west of the Site. Historic routes known to have crossed this portion of Butte Valley include the Hamilton to Cherry Creek Stageline and the route of Simpson's 1859 eastward return across the Great Basin (Simpson 1876).

The predictive model indicates that during Pre-Archaic and Archaic times the Butte Valley Site was situated along the highest stands of the pluvial lake which was present, from time to time. This water source should increase the density of Pre-Archaic and Archaic period sites, especially in the northeast

corner of the Site. Existing site data does not, however, indicate such a concentration. Higher up on the pediment (to the southeast) site density should be lower and less representative of any given prehistoric period. Very little, if any, Fremont period material is predicted for the area. Sites that reflect the transition from the Archaic to the Post-Fremont period will be of particular interest. Historic period transportation corridors are known to pass through the Site and sites dating to the period of their use will be found. Extensive ranching activity in the area is also noted.

Taken together, the existing data and the predictive model suggest that prehistoric site density in the area should be quite low. Historic sites should be present and may represent a large portion of the identified cultural resources. Variability in site types should be limited.

During a systematic Class II reconnaissance (James and Zeier 1981), 14.6 percent of the Site was surveyed and five sites observed: three prehistoric, one historic, and one with both periods represented. Two recent sites (1940s-1950s) were also observed and recorded as historic sites (see Table 4-2). Of the prehistoric sites, only site 26WP1164 contained a diagnostic artifact, a Rose Spring Corner-notched projectile point which indicates that the site dates to the Late Archaic period. The site also contains a historic component consisting of a metal tub and sheep bones. The historic period site 26WP1162, located on the Hamilton to Cherry Creek stage road, consists of brown glass fragments from a whiskey bottle and probably dates to the period of that route's use. The two more recent sites, 26WP1165 and WP1166, are scatters of rusted cans, broken bottles and other debris. They probably represent sheepherder camps.

General observations of the existing data suggest that sites are more prevalent in the southern margin of the Site, on the flatter alluvial areas between the hills to the west and the playa to the northeast. No sites dating to the Pre-Archaic period were observed. As anticipated, site density is low and there is a definite emphasis on smaller task sites. The abundance of historic sites relates to ranching and agricultural activities, particularly sheepherding. Linear transformation of the Class II survey data suggests that as many as 34 sites may exist in the Butte Valley Site. The quantity of data will be low, however, due to the smaller size of the sites. The variety

of data present, as measured by the number of populations represented and site type variability, is moderate. The absence of complex sites with a large number of features indicates that sites in the area can be readily dealt with should mitigation be called for. Cultural resources in the Site appear to have only a limited research potential.

No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Site. None of the sites listed in Table 4-2 appear at this time to be eligible to the Register (James and Zeier 1981).

4.1.2 Paleontology

The Butte Valley Site includes an area (less than 10%) which is situated on lower Pennsylvanian to Lower Permian limestones and siltstones of the Riepe Spring Formation. This strata has a moderate paleontological potential. The remainder of the Site is on sediments mapped as Quaternary alluvium which is of low potential. If any fossils other than float or as yet undiscovered Pleistocene mammals are encountered, they would occur in the extreme northwest corner of the Site. To date, no fossil localities from that area have been recorded.

4.2 NORTH STEPTOE VALLEY SITE

The North Steptoe Valley Site is situated along the northern boundary of White Pine County on the eastern side of Steptoe Valley (see Figure 4-1). The Site is relatively flat, but stabilized sand dunes and low hummocks give the area some relief. Silty and sandy soils are interspersed by hardpan areas. Alluvial gravels are present on the piedmont surface along the southeastern portion. A combination of sagebrush, greasewood, and shadscale dominates the eastern half of the Site. Vegetation in the western half consists of Great Basin wild rye, salt grass and other grasses, greasewood, rabbitbrush, and pickleweed. Sand dunes are generally covered with greasewood, Indian ricegrass, rubber rabbitbrush, and low rabbitbrush.

4.2.1 Archaeology And History

Only two surveys had been conducted in the North Steptoe Valley Site prior to WPPP (see Table 4-3); a seismic line and a

highways material pit. The WPPP meteorological monitoring station (located just west of the Site) and eight WPPP related geophysical test locations have subsequently been investigated. As a result of this work, an isolated prehistoric artifact and two small sites were recorded. Given the limited amount of reconnaissance, the discovery of three sites suggests that the area has at least a moderate site density.

The predictive model suggests nothing out of the ordinary for the North Steptoe Valley Site. Pre-Archaic period sites should be few in number due to the apparent absence of extensive pluvial lakes in this portion of the valley. Most prehistoric sites found will probably date to the Archaic and the Post-Fremont periods. Fremont period sites are not likely. The presence of dunes in the Site will serve to increase site density but sites found in dunes are frequently small. Little should be present that dates to the historic period. If such sites are found, they will be along the Nevada Northern Railroad (located just outside the Site) or up on the pediment in the southeastern corner of the Site.

The systematic Class II reconnaissance performed by James and Zeier (1981) revealed 27 archaeological sites, the highest number recorded in the three Sites (see Table 4-4). Most are isolated prehistoric period finds or very small scatters of debitage. Several diagnostic projectile points were among the isolated finds. Two (26WP1212 and 26WP1223) are obsidian Desert Side-notched points (found approximately 150m apart) that date to the Numic or Post-Fremont Period. Another projectile point (26WP1217) is a basalt fragment, possibly a Rose Spring Corner-notched. Still another (26WP1223) is a small, dark quartzite, stemmed point which may be assignable to the Pre-Archaic Period. At site 26WP1210 two points, a large basalt Humboldt Concave Base point and a small resharpened chert Humboldt Basal-notched point, were found some 5m apart.

The largest site recorded is 26WP1203, an extensive scatter of chipped and ground stone artifacts. Materials tend to be clustered forming nodes of higher density. Such horizontal site patterning is generally thought to represent reoccupation. The Pinto/Gatecliff Split Stem and Rose Spring Corner-notched projectile points found at the site indicate its use throughout the Archaic; and Shoshonean pottery reflects occupation during the Numic period.

Site 26WP1213 is a very diffuse scatter of debitage which appears to be eroding out of sand dunes. Materials were found in a deflated area around several dunes, and the possibility exists that some deposits are to be found within the dunes. Of interest is the limited amount of basalt present at the site. This is in contrast with most other sites found in the vicinity. Several fragments of a shaped sandstone mano were also present. Site 26WP1214, assignable to the Archaic period, is also in an area dominated by small hummocks and sand dunes. A grinding slab fragment is present, as are several basalt unifaces and one basalt Elko Corner-notched point.

Survey results suggest that site density is highest in areas dominated by sand dunes and low hummocks, lowest in hardpan and alluvial areas. Dunes are found in a broad band running diagonally through the Site from northeast to southwest. Hardpan and playa areas are more frequent in the northwest corner of the site. Site density on the alluvial fans and piedmont in the southeast corner is moderate. Many of the sites are small and diffuse in nature. Linear transformation of Class II survey results suggests that as many as 177 sites may be present in the Site (James and Zeier 1981). The quantity and variability of data is high due to the number of sites, the moderate abundance of field and base camp sites, and the number of periods represented. The number of more complex base and field camp sites and their dune context may require an involved mitigation program. The research potential of the sites is quite high.

No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Site. James and Zeier (1981:86) state that site 26WP1203 is eligible to the Register and that sites 26WP1204, 1205, 1209, 1213, and 1214 should be more fully evaluated in order to determine their eligibility.

4.2.2 Paleontology

The North Steptoe Valley Site is on sediments mapped as Quaternary alluvium and playa deposits. Paleontological potential is low. Fossils from nearby highlands may be present but only as float (Firby and Zeier 1983). The possibility of mammalian fossils of Pleistocene age may add significance to the Site, but there is no record in the literature that any occur.

4.3 SPRING VALLEY SITE

The Spring Valley Site is situated along the southwestern side of Spring Valley (see Figure 4-1). The western portion is covered with patches of sandy soils and alluvial gravels and is dissected by shallow eastern sloping drainages. Soils in the eastern portion include silty, hardpan areas and stabilized sand dunes. Vegetation is characteristic of the sagebrush zone and reflects local soil conditions. The western half is dominated by alternating patches of black sage, sagebrush, and winterfat. Other species include rabbitbrush, budsage, Indian ricegrass, and prickly pear. The eastern half of the Site is covered by an intermingling of sagebrush, greasewood, and rabbitbrush with salt grass. In the central portion of the Site, natural vegetation has been removed and the area seeded with crested wheatgrass. The southeastern portion was cleared, but never seeded.

4.3.1 Archaeology And History

Of the three Sites, the Spring Valley Site received the greatest amount of archaeological research attention prior to the WPPP. Several seismic lines, geophysical test sites, material pits, and a fenceline had been investigated (see Table 4-5). Small scale WPPP projects include a meteorological monitoring station and four geophysical test locations. Two sites were recorded and include an isolated Elko projectile point assignable to the Archaic period and a small prehistoric site. Neither is within the limits of the Site. Given the amount of survey work completed, this represents a limited yield. Site density would seem to be light.

The Site is situated in the highest part of the valley and was an exposed land surface during the Late Pleistocene, separating pluvial Lake Spring to the north and Lake Maxey on the south at their highest stands (Mifflin and Wheat 1979). Pre-Archaic sites may be present, but pluvial lakes would have had an ever decreasing affect on site location and density as they decreased in size. Prehistoric use of the area should have been quite high during Archaic times given the abundance of water sources in Spring Valley. Fremont period sites are also more likely in this Site than either of the other two. Limited historic agricultural and ranching activity is anticipated.

During the systematic Class II reconnaissance of the Site (James and Zeier 1981), 12 prehistoric and one historic site was recorded (see Table 4-6). Six of the prehistoric sites are isolated finds, four are artifact scatters, and two are isolated fire hearths containing fire cracked rock and ground stone fragments. The one historic site is a possible sheepherder's camp and is marked by rusted cans and several wood fragments.

Site 26WP1244 is a Fremont basecamp situated on three low knolls near the middle of Spring Valley. About 50m northeast of the site is an unnamed well that may have been a seep or spring prehistorically. The site consists of a light scatter of flakes, several grinding slabs, and one mano fragment. Diagnostic artifacts included one Elko Corner-notched projectile point, one Snake Valley Black-on-gray pottery sherd, and six Snake Valley Gray pottery sherds. Based on the pottery sherds, a date of A.D. 900 to 1200 is suggested for the Fremont occupation of the site (see Madsen 1977:5). In addition to the prehistoric Fremont materials, several historic artifacts were present on the site.

Site 26WP1251 is a light scatter of flakes situated about 0.8 km south of 26WP1244 on a flat area between a low knoll to the west and a gentle slope to the east. A small scatter of fire cracked rock and several ground stone fragments were observed. Two Humboldt Concave Base projectile points and an obsidian Northern Side-notched projectile point were found in association with each other and their presence suggests that the site was occupied during the Middle Archaic period.

Located southeast of Site 26WP1251, Site 26WP1247 consists of a light scatter of flakes, several ground stone fragments, an unlined fire hearth, and a scatter of over 25 Shoshonean sherds from at least two large conical vessels. A short distance to the east of this site, a large scatter of numerous ground stone fragments and several flakes (26WP1249) was recorded around the base of a stabilized sand dune. As indicated by the Shoshonean sherds, 26WP1247 was occupied during the Numic or Post Fremont Period. While the dating of 26WP1249 is uncertain, its close proximity to the other site suggests it may also represent a Numic site and was probably a seed gathering and processing area.

With the exception of site 26WP1246, all the sites are located up on the pediment along the eastern half of the Site. No Pre-Archaic sites were found in this area during the

survey, suggesting that the area was too high above the then present lake levels to have been extensively exploited. Observed site density in Spring Valley is higher than that of Butte Valley but lower than North Steptoe Valley. Of interest is the number of large base camp sites which represent three distinct prehistoric periods; the Archaic, Fremont, and Numic or Post-Fremont. Based on the linear transformation of survey data, an estimated 93 sites may be present in the Spring Valley Site. The quantity and complexity of the data contained in these sites will be fairly high due to the number of base and field camp sites. Research potential is high, especially in regard to questions dealing with the Fremont and Numic periods.

No sites presently listed on or determined eligible to the National Register of Historic Places are located in or are immediately adjacent to the Site. James and Zeier (1981:85-86) suggest that sites 26WP1244, 1247, and 1251 are eligible to the National Register and that sites 26WP1249 and 1256 deserve additional consideration regarding eligibility. This listing indicates that fully one third of the sites recorded to date are eligible.

4.3.2 Paleontology

The Spring Valley Site lies entirely within an area mapped as Quaternary alluvium. Potential for fossil occurrence other than float from adjacent Paleozoic rocks is very low.

5.0 WATER SUPPLY SYSTEM ARCHAEOLOGY, HISTORY, AND PALEONTOLOGY

The locations of water supply system well fields and pipeline corridors are shown on Figure 5-1, Figure 5-2, and Figure 5-3. Throughout this chapter, the term "site" is used frequently. In order to avoid confusion, "Site" (capitalized) will refer to the Butte Valley Site, North Steptoe Valley Site, and Spring Valley Site while "site" (not capitalized) will denote locations of archaeological or historical importance.

5.1 BUTTE VALLEY SITE

Water needed in the operation of a power plant at the Butte Valley Site will come from two well field areas. The first is located adjacent to the Site in Butte Valley and includes three separate well fields. Three other well fields are proposed in the second area, located along the eastern edge of North Steptoe Valley. The pipeline corridor from North Steptoe Valley runs west across the valley to Cherry Creek, south through Egan Basin, and west to the Site.

5.1.1 Archaeology and History

Application of the predictive model suggests that the three Butte Valley well field locations are in zones of low site density. During Pre-Archaic times they were above the highest stands of the pluvial lake in Butte Valley. Over the term of the period, however, this had an ever decreasing affect on site location and density. In regard to the historic period, the eastward leg of Simpson's 1859 route across Nevada passes through the southern well field; the Hunter mining district, active during the late 1870's, abuts the northeast and south well fields; and the Hamilton to Cherry Creek stage route passes through the south and northeast fields. Only the northwest field is in an agricultural zone.

Review of existing project and site data demonstrates that while a moderate amount of work has been completed in each of the three well field areas (see Table 5-1), very few sites have been identified (see Table 5-2). Of the three recorded sites, two are historic and both relate to the Hamilton to Cherry Creek stage line. This suggests that prehistoric site density will be low in

all three locations and that historic site density will be moderate, especially in the southern and northeastern locations.

According to the predictive model, the three well fields located in North Steptoe Valley should be quite similar. Subtle differences, however, allow for their separation. The northern well field is covered partly by stabilized sand dunes that have a high site density (see Section 4.2.1). Dunes are not as prevalent in the central and southern fields. Historic period sites should be equally prevalent in the three fields. The Pony Express route passes between the central and southern well fields. The Nevada Northern Railroad is adjacent to all three but comes closest to the southern field. Historic sites in the well fields will relate to ranching and agricultural activities.

The amount of previous work undertaken in the three well fields is inconsistent (see Table 5-3). The northern field, located in an area surveyed as part of the WPPP Class II study, is the best understood. The southern location, on the other hand, has recieved very little attention. Observed differences in the number of sites in each field can, in part, be attributed to this disparity (see Table 5-4). Data seem to suggest that site density decreases from north to south in Steptoe Valley.

The pipeline corridor running between the North Steptoe Valley well fields and the Butte Valley Site crosses the southern end of Butte Valley which contained a pluvial lake during portions of the Pre-Archaic and late Archaic periods. If Pre-Archaic period sites are located along this corridor , this is where they will be found. In Egan Basin and near Egan Creek Pass, the pipeline corridor approaches the line of transition between the upper sage and the Pinyon Juniper vegetation zones. This is frequently an area of high site density. Steward (1938) notes several pre- and post-contact Indian villages in these same areas. Recorded burials and thermal springs are present along Egan Creek and these may potentially be of significance to contemporary Native Americans. The alignment follows the Hamilton to Cherry Creek stageline route and small historic sites can be expected. For example the Egan Station is located toward the northern end of the basin. A 1930s CCC camp is also located near the corridor. The pipeline corridor will also pass through, or near, the town of Cherry Creek and the Cherry Creek Rail Station; both are highly significant historic resources.

The majority of previous archaeological research along the pipeline corridor is focused in Butte Valley (see Table 5-3). Sites recorded to date (see Table 5-4) are almost all of the historic period and cluster around the stage station in Egan Basin and the townsite of Cherry Creek. The single exception is a large prehistoric site situated in Steptoe Valley. The apparently low prehistoric site density is deceptive and probably relates more to the Butte Valley segement of the corridor than the Egan Basin or Steptoe Valley portions.

No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the six Butte Valley related well field sites. James and Zeier (1981:86) suggest that site 26WP1203 in the northern well field in North Steptoe Valley is eligible for inclusion and that sites 26WP1205 and 1213 are worthy of further consideration. Several of the historic sites along the pipeline corridor are probably eligible, including Cherry Creek and its railroad station, and the Egan Creek stage station.

5.1.2 Paleontology

Well fields located to the northeast and the south of the Butte Valley Site are all within areas covered by Quaternary alluvium. The same is true of associated pipeline corridors. The well field to the northeast is closer to the valley margin and may exhibit a higher potential for isolated fossils in a float situation. The well field to the northwest of the Site includes an area covered (15%) by lower Pennsylvanian to Permian limestones and siltstones of high paleontological potential. This well field may contain numerous, if isolated, fossils.

The three well fields in North Steptoe Valley are also located on Quaternary alluvium. The pipeline corridor leading from North Steptoe to Butte Valley crosses Quaternary alluvial and playa deposits of low paleontological potential and small areas of quartzites and siltstones representing the uppermost Precambrian and lower Cambrian formations. These formations are highly significant due to their rarity.

5.2 NORTH STEPTOE VALLEY SITE

Five well fields will be required to supply water to operate a power plant at the North Steptoe Valley Site, three of which

are similar to those discussed in Section 5.1 for the Butte Valley Site. All of the fields are located along the eastern edge of the valley, both to the north and south of the Site. For discussion purposes, the well fields are numbered 1 through 5, beginning with the northern most field.

5.2.1 Archaeology And History

The predictive model suggests that the five well fields and related pipeline corridors should be quite similar. A number of springs are present in Field 1 which should increase the archaeological site density of that area. Sites present may be large. These springs may potentially be of significance to contemporary Native Americans. Field 2 is partially covered by stabilized sand dunes which are quite high in site density (see Section 4.2.1). These dunes are not as prevalent in the southern three fields. The Pony Express route passes between Fields 3 and 4, and the Nevada Northern Railroad is adjacent to Field 4. Only Field 5 is located in the agricultural zone, the others are all below it on the valley floor.

Previous work in the five North Steptoe well fields has been inconsistent (see Table 5-3 and 5-5). Fields 2 and 5 are located in areas surveyed as part of the WPPP Class II study. Fields 3 and 4 have received very little attention and no prior work has been done in Field 1. Observed differences in the number of sites in each field can, in part, be attributed to this disparity (see Table 5-4 and 5-6). The data seem to suggest that site density decreases from north to south in Steptoe Valley. Where as Archaic and Post-Fremont sites were found in Field 2, sites in Field 5 are identified as belonging to the Pre-Archaic period. The dunes present in Field 2 may be covering up similar Pre-Archaic period sites.

No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the five North Steptoe Valley well field sites and pipeline corridors. James and Zeier (1981:86) suggest that site 26WP1203 in Field 2 is eligible for inclusion. Sites 26WP1205 and 1213 in Field 2 and 26WP1232 in Well Field 5 are worthy of further consideration.

5.2.2 Paleontology

All five well fields and pipeline corridors leading to the Site are situated on Quaternary alluvial deposits. Only their proximity to the valley margin increases the likelihood that isolated fossils may be found in float.

5.3 SPRING VALLEY SITE

Four well fields will be required to supply water to a power plant at the Spring Valley Site. They are located generally to the north of the Site along both the east and west sides of Spring Valley.

5.3.1 Archaeology And History

According to the predictive model, the four Spring Valley well fields and related pipeline corridors should be quite distinct with regard to their archaeological potential. The northwest field has an active stream running through it and site density around this stream should be high. An extensive alluvial fan has developed in relationship with this stream and if Fremont period village sites are present in Spring Valley then this is a likely spot to find them. The northeast field was adjacent to both a late Pleistocene and Holocene pluvial lake. Therefore, sites dating to the Pre-Archaic and Archaic periods should be fairly abundant. A number of caves are reported in the nearby Schell Creek and Snake Ranges that may be of significance to contemporary Indian people. Two explorers passed through the general area: Jedidiah Smith in 1827 and James Simpson in 1859. The northwest well field is entirely in an historic agricultural zone while the northeast and southwest fields are only partially included. The eastern two fields are adjacent to the Osceola mining district which was active from the 1870's through the turn of the century. Sites may be in these areas that date to the Osceola period of mining activities.

A review of existing data shows that only a few small projects have been conducted in each of the well fields (see Table 5-7). Given the limited number of projects, a fair number of sites have been recorded (see Table 5-8). These results are probably most representative for the southwest field. As predicted, site density seems to be the highest in the nortwest field, lowest in the southwest field. A Fremont period site was

recorded, not in the northwest field as expected but in the southeast field. The density of sites does, however, appear to be the highest in the northwest field.

No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the four Spring Valley well fields and pipeline corridors. Two of the sites listed in Table 5-8 may be worthy of further consideration; 26WP1292 (a quarry site in the northwest field) and 26WP1244 (a Fremont period field camp).

5.3.2 Paleontology

All four of the well fields and pipeline corridors are located in areas covered with Quaternary alluvium. They are, however, adjacent to mountainous areas that contain geological deposits of a high paleontological potential (lower Pennsylvanian to Permian siltstones and quartzites). Fossils from this unit may occur in the alluvium as float.

6.0 POWER TRANSMISSION SYSTEM ARCHAEOLOGY, HISTORY, AND PALEONTOLOGY

The location of the power transmission system two-mile-wide study corridors is shown in Figure 6-1. Power generated by WPPP will be transmitted via powerlines to one of three destinations: the Gonder Substation near Ely, the Machacek Substation near Eureka, or the McCullough Switching Station in southern Nevada. Only those portions of the alternates that are located in White Pine County are evaluated using the predictive model.

Throughout this chapter, the term "site" is used frequently. In order to avoid confusion, "Site" (capitalized) will refer to the Butte Valley Site, North Steptoe Valley Site, and Spring Valley Site while "site" (not capitalized) will denote locations of archaeological or historical importance.

6.1 BUTTE VALLEY SITE

Power transmission corridors leading from the Butte Valley Site to the Machacek Substation will be situated along one of two corridors, the existing Gonder-Machacek transmission line or the North Machacek Alternate. Access south to the McCullough Switching Station is complex, the main corridor splitting into alternate routes at several points. Beginning at the Site, the route is along Jakes Valley Alternate and then either the Foothill or the Preston Alternate. These converge and then split again into the Coal Valley and White River Alternates. Several options are present in southern Lincoln County including the Pahroc, Delamar, Kane Springs Wash, and Pahranagat Alternates. These converge in Clark County into the Arrow Canyon Alternate. The Dry Lake Valley and the Railroad Pass Alternates are short diversions off of the Arrow Canyon Alternate. The Arrow Canyon and Pahranagat Alternates are not described since they are existing facilities. Only portions of the Delamar and Dry Lake Valley Alternates are dealt with here.

6.1.1 Archaeology And History

6.1.1.1 Machacek Corridors

The North Machacek Alternate runs west from the Butte Valley Site, crosses the Butte Mountains, and passes through the southern portion of Long Valley and Newark Valley. In contrast

to most of the others, this alternate runs against the grain of the Basin and Range topography typical of the project area. This should have the effect of increasing the observed site type variablity. The areas of highest site density will be along the valley margins. Pre-Archaic period sites may well be encountered in Newark Valley and Long Valley along the margins of former pluvial lakes. The alternate crosses mid Holocene pluvial lake terraces in Newark Valley and a higher density of early Archaic period sites may be expected here. Historic period activities along the alternate are largely restricted to farming and ranching. The alternate does pass adjacent to the Newark mining district which has a long history of ore production, beginning in the late 1860's. Historic sites of that period may be found along the North Machacek Alternate.

Several archaeological projects have been undertaken along the North Machacek Alternate (See Table 6-1) and a moderate number of sites have been identified (see Table 6-2). The alternate encroaches upon the Sunshine Locality, an archaeological district listed on the National Register of Historic Places. Present in this district are concentrations of Pre-Archaic and early Archaic period sites associated with remnants of a former pluvial lake (York 1974, 1978). Nearly half the sites listed in Table 6-2 are located in this district. The alternate does, however, pass to the south of the major concentration of sites in the district. Of the sites located along the alternate but outside the district, most are quite small prehistoric sites.

6.1.1.2 McCullough Switching Corridors

All of the Jakes Valley Alternate and short portions of the Preston and Foothills Alternates are located within the County. The predictive model suggests that each will have a somewhat different pattern of site distribution and cultural affiliation. The Jakes Valley Alternate passes through an area of well watered pinyon/juniper woodland (the Thirty Mile Spring area) before descending into Jakes Valley. The alternate passes along the eastern edge of what was a pluvial lake in the valley before rising again into pinyon/juniper woodlands. Pre-Archaic sites along the alternate will be located along the old pluvial lake margins. Archaic and Post-Fremont sites will be more widely dispersed with concentrations along the pinyon/sage ecotone, well watered areas in the pinyon/juniper woodlands, and along

ephemeral streams in the valley bottom. These observations are consistent with previous research in the general Jakes Valley area (Busby et al. 1980; James and Zeier 1981).

Previous archaeological surveys (see Table 6-3) have not resulted in the discovery of as many sites within the corridor as might be anticipated (see Table 6-4). In fact, six of the sites recorded for the alternate were found in a single MX Class II survey quadrat located in the pinyon/juniper woodlands along the eastern edge of Jakes Valley. None of the sites are assignable to a particular cultural period. Almost all are small scatters or isolated finds. No historic resources have been recorded in the alternate. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Jakes Valley Alternate.

Two major differences are envisioned between the Foothill and the Preston Alternates. The Foothill Alternate passes higher up on the valley pediment and in places follows the ecotone between the pinyon/juniper woodland and the sagebrush vegetation communities. This should have the effect of increasing site densities, especially for the Archaic and Post-Fremont periods. The Preston Alternate is situated closer to the White River and consequently crosses a number of alluvial features. Fremont period sites may be found in such situations. The Preston area has played an important role in the regional development of agriculture and ranching. As a result, historic period sites dating to the late 1800's and early 1900's will be more prevalent in the Preston Alternate. Several thermal springs are also recorded for the general Preston area which may possibly serve to increase interest in this alternate by local Native Americans.

Data on previous archaeological surveys conducted in each of the alternates and sites recorded to date are presented in Tables 6-5 through 6-8. Comparison of Tables 6-5 and 6-7 show that a slightly higher number of projects have been conducted in the area of the Preston Alternate and that more sites have been recorded (see Tables 6-6 and 6-8). Eight sites in the Preston Alternate, however, were located during a Class II survey conducted in the White River area north of Preston (James and Zeier 1981). No equally extensive areal survey effort has been undertaken anywhere along the Foothills Alternate. Therefore, intensive comparison of the two data sets is probably advisable. Only two of the sites in the Foothill Alternate are identifiable

as to cultural affiliation; one is an historic period site, the other an Archaic period site. Of interest, is that two of the sites in the alternate are identified as lithic quarries. Several sites in the Preston Alternate can be assigned to a period; four sites fall into the Archaic period while four others are historic. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Foothill or Preston Alternates. James and Zeier (1981) suggest that sites 26WP1192 and 26WP1196 are eligible to the Register.

Examination of the Coal Valley Alternate and other alternates to the south of it relies totally on project and site records retained by the BLM. Table 6-9 indicates that while relatively few projects have been conducted along the Coal Valley Alternate, a substantial number of sites have been recorded (see Table 6-10). Most are very small scatters or isolated artifacts. Two Post-Fremont and one Archaic period sites are among those recorded. Results of the MX Class II survey in this region suggest that the area of highest site density will be found along the valley edges at the top of the pediment and around the edges of the playa in areas where seasonal pools may form (Busby et al. 1980). The Coal Valley Alternate falls largely between these areas and, therefore, it is not surprising that observed site density is somewhat light. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the alternate. Sites 26NY1255 and 4-1427 deserve further consideration to determine their eligibility to the Register.

The White River Alternate and the others south of it are notably different from those previously discussed. Many of the valleys have external drainages; and, as a result, pluvial lakes were never present. Vegetation is also notably different. However, Sonoran desert vegetation predominates in the valleys and pinyon/juniper woodlands are far less frequent.

The listing of previous archaeological research provided in Table 6-11 reveals that little work has been undertaken in the path of the White River Alternate. Of the few projects in the area, the majority are quite small (material pits and geotechnical drilling sites). As a result, few sites have been located within the alternate (see Table 6-12). Only one site is identifiable as to cultural affiliation (a historic period dump),

and all of them are very small in size. The existing data does not allow more specific statements of site distribution or density. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the White River Alternate. The White River Narrows National Register site is located outside of the alternate to the south and west.

Data for the Pahroc Alternate are even more restricted. Only two projects have been undertaken in the path of the alternate (see Table 6-13), and only one site has been recorded (see Table 6-14). A similar situation exists for the Delamar Alternate (as discussed in Section 6.1, only a portion of this alternate is evaluated). Two projects have been conducted (see Table 6-15) with two sites being recorded (see Table 6-16). One of the sites is the route of a historic telegraph line, the other is an Archaic period archaeological site. Data presently on hand do not allow for a detailed assessment of site density or distribution in either the Pahroc or Delamar Alternates. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to either alternate.

Information regarding the Kane Springs Wash Alternate is also quite restricted. Only five projects have been undertaken in the path of the alternate (see Table 6-17), the majority of which are fairly small in scale. Existing site information reveals that nine sites have been recorded in the alternate (see Table 6-18). Of these, only five appear to have been identified as a result of the listed projects. Two sites are assignable to the Pre-Archaic period. BLM records indicate that fluted projectile points are present at both sites. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the alternate. The two Pre-Archaic period sites deserve further consideration to determine their National Register eligibility.

Only the northern portion of the Dry Lake Valley Alternate is evaluated. Numerous projects have been completed along the alternate (Table 6-19) and the recorded prehistoric sites (see Table 6-20) exhibit a distinct distributional pattern. The sites, which tend to be small, cluster around the edges of teh valley where steep escarpments are present. Site density in such areas is quite high. The central portion of Dry Lake Valley has

a much lower site density. This pattern is in contrast with better watered areas (Moapa Valley, for example) where sites are more frequent along the banks of a stream course in the central part of the valley. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Dry Lake Valley Alternate.

Existing data for the Railroad Pass Alternate are restricted (see Table 6-21), but suggest that site density along the route will be quite low. Historic period sites associated with mining activities in and around Alunite (active ca. 1908-1915) are recorded in the Railroad Pass area (see Table 22) and the railroad was first constructed through the pass in 1904. Previously recorded sites are concentrated in Railroad Pass while few are noted for the Eldorado Valley section of the altrernate. The largest percentage of the alternate lies in this lower, less productive, area. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Railroad Pass Alternate.

6.1.2 Paleontology

The North Machacek Alternate crosses Quaternary alluvium, of low paleontological potential, for 55% of its length. Some 30% of the alternate intercepts strata of moderate potential: lower Pennsylvanian-lower Permian siltstones and sandstones, and Mississippian clastics with minor carbonates. Only 5% of the alternate is in an area of high potential (Tertiary lacustrine sediments). No known fossil localities are recorded for the alternate.

Access to the McCullough Switching Station proceeds along the Jakes Valley Alternate which crosses Quaternary alluvium (of low potential) for approximately 55% of its proposed route and early Tertiary rhyolitic flows and shallow intrusives (of very low potential) for 40%. The remainder intercepts cherty Permian limestones, shales, and Lower Permian clastic units. No known fossil localities are impacted by this alternate.

At the south end of Jakes Valley the corridor splits into two alternates. The Preston Alternate crosses Quaternary alluvium for over 90% of its route. Less than 10% intercepts the following units: Tertiary ash flow tuffs 2%, limestones, siltstones and sandstones of the Lower Pennsylvanian-Lower

Permian 2%, and Mississippian clastics with minor carbonates. One small area (less than 1%) is of a Middle Ordovician Pogonip group. One locality is intercepted by this route (plot number 16 on Fig. 1 in Firby and Zeier 1983). Present at the locality are marine invertebrates located in a road cut along Highway 6.

The Foothill Alternate intercepts Tertiary lacustrine sediments, of high paleontological potential, over 15% of its path. Almost half the alternate (45%) crosses Tertiary rhyolite flows of very low paleontological potential. Less than 5% of the alternate crosses Tertiary silicic ash flow tuffs and sedimentary units which are potentially fossiliferous. Dolomites, limestones, and minor Devonian age clastics make up 5% of the proposed route. These strata are considered to be of moderate potential for paleontological resources. The remainder of the route lies on Quaternary alluvium. No localities are known to occur along the alternate.

The Coal Valley, White River, Delamar, and Kane Springs Wash Alternates all exhibit a similar pattern in regard to paleontological potential. In each case, the major part of the alternate consists of Quaternary alluvium and playa deposits (82%, 90%, 95%, and 85% respectively). Tertiary ash tuff and sedimentary rocks of moderate paleontological potential made up the remainder. A trace of high potential Cambrian limestones and dolomite are present along the Kane Springs Wash Alternate. Just the opposite pattern is seen with the Pahroc Alternate where Tertiary ash tuff accounts for 90% of the alternate's length.

The Dry Lake Valley Alternate crosses mostly Quaternary alluvium (75%). The remainder intersects strata of a moderate to high paleontological potential: Mont Cristo limestones, the Bird Springs formation, and the Muddy Creek formation. The Railroad Pass Alternate lies 100% on quaternary alluvium and playa deposits that have a low potential to yield fossils.

6.2 NORTH STEPTOE VALLEY SITE

Power transmission from the North Steptoe Valley Site to the Machacek Substation will be along either Egan Basin or the Egan Range Alternate and then either the existing Gonder-Machacek transmission line or the North Machacek Alternate (discussed in Section 6.1.1.1). Access south to the McCullough Switching Station consists of an east and a west route. The western route

will run southwest along either the Egan Basin or the Egan Range Alternate. The two join at the north end of Jakes Valley and from this point south the alternates are identical to those described in Section 6.1.1. The eastern route crosses the Schell Creek Range just to the southeast of the Site and runs along the eastern edge of the range well into Lincoln County. This is refered to as the Muleshoe Alternate. The route south from this point is as described in Section 6.1.1.

6.2.1 Archaeology And History

6.2.1.1 Machacek Substation Corridors

The route of the Egan Basin Alternate is essentially the same as that followed by the proposed water pipeline from North Steptoe Valley to Butte Valley. Application of the predictive model and a review of existing data relevant to this route are discussed in Section 5.1.1 (see also Tables 6-23 and 6-24). Historic resources are abundant along the alternate and sites are present that may potentially be of significant interest to local Native Amerians.

The Egan Range Alternate encompasses a wide range of environmental variability. The greatest areas of site density are along the lower slopes of the Egan Range on both the east and west faces and on the pediment along the edge of Steptoe valley. The majority of sites found will belong to the Archaic and Post-Fremont periods, although, Pre-Archaic sites may be present in Steptoe Valley proper. Numerous springs are present along this pediment (such as Monte Neva). Steward (1933) has recorded archaeological sites in this area that date to the time of transition from prehistoric to historic times. The springs and these recent sites may potentially be of interest to local Native Americans. Historic period sites relating to agriculture and ranching will also be abundant along the pediment.

Review of Table 6-25 shows that a significant number of archaeological surveys have been completed in the Egan Range Alternate. A majority of these have been in relation to seismic and well exploration and are quite small in size. Surprisingly few sites have been recorded as a result of this work (see Table 6-26). Most of the recorded sites are located in Steptoe Valley and most of these are located along the western edge of the valley where water resources are abundant. Few archaeological

resources have been located along the Butte Valley section of the alternate: only two are identifiable as to cultural affiliation. Site 4-1326 is an Archaic period field camp and 26WP971 is a historic period cabin. These data tend to confirm the predicted site distribution and density. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Egan Range Alternate. Sites in the area of the Monte Neva spring and site 4-1326 may be worthy of further consideration.

6.2.1.2 McCullough Switching Station Corridors

Of the alternate powerline corridors evaluated using the predictive model, the Muleshoe Alternate appears to hold the greatest potential for cultural resources. Water is abundant all along the western edge of Spring Valley in the form of perennial streams and springs. Sites of all prehistoric periods should be present, abundant, and at times quite large. Archaic and Post-Fremont period sites will predominate and Fremont village sites may be present. Steward (1938) recorded a number of ethnographic period sites along the valley margin and caves are recorded to the west of the alternate in the Schell Creek Range. Local Native American interest in the alternate may potentially be high. Historic period sites in the area are numerous. Included in the alternate are several old townsites dating to the 1870s and 1880s. These include Cleveland, McCoy, Robinson, Keegan, Bassett, Doutre, Muncy Creek, and Aurum. None of these communities was large and probably little remains of them today. However, they are important archaeological sites that can provide vital information on this period of the County's history.

Table 6-27 indicates that numerous projects have been undertaken along the Muleshoe Alternate. This is not surprising, however, considering the nearly 140 mile length of the alternate. Seismic lines, MX related activities, and highway projects make up most of the listing. Much of this work has been done in Lincoln County. Sites recorded to date are listed in Table 6-28. As predicted, five of the eight sites located in the White Pine County date to the historic period. None of the prehistoric sites are assignable as to period, and all are small task sites. Given all the permanent water sources in northern Spring Valley, it is interesting that no larger base camp sites have been recorded in the path of the alternate. Numerically, most of the recorded sites have been located in the Lincoln County portion of

the alternate. Given that more work has been done here, however, this is to be expected. Site density appears to be similar to that seen further north. Prehistoric sites vary in size, but only one is identifiable as to cultural affiliation, a Post-Fremont field camp site. Of interest is that no Fremont period sites were found within the Muleshoe Alternate. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Muleshoe Alternate. Special consideration should be given to the historic resources located along the western edge of Spring Valley since many may be eligible to the Register. Site 4-1058 should be investigated to determine its eligibility.

6.2.2 Paleontology

The Egan Basin Alternate lies on Quaternary alluvium and playa deposits for about 95% of its total linear distance. The remaining 5% crosses Lower Pennsylvanian - Lower Permian carbonates (2%), Silurian dolomites 2%, and Devonian carbonates 1%. No known localities are impacted by this alternate in the County, however, Locality 18 is just outside the boundary of the alternate in Ordovician Fish Haven dolomite.

The Egan Range Alternate crosses Quaternary alluvium for approximately 90% of its linear distance. The remainder intercepts Silurian and Devonian carbonate and clastic units which have moderate to high paleontological potential, and a minor amount of Tertiary volcanics with very low paleontological potential. The Steptoe Valley section of the alternate lies 100% in younger Quaternary alluvium and playa deposits and has a low potential for paleontological resources. No known localities are impacted by this alternate.

The eastern route to the McCullough Switching Station, the Muleshoe Alternate, crosses Quaternary alluvium for 90% of its lineal distance. Traces of other deposits account for the remainder; Cenozoic volcanic andesites, Devonian carbonates, middle and upper Cambrian limestone and dolomite, lower Pennsylvanian to lower Permian rock, and Ordovician carbonates. One known fossil locality (plot no. 78 on Fig. 1 in Firby and Zeier 1983) is crossed by the alternate. This locality is of interest in that it consists of Paleozoic brachiopods and gastropods found in Quaternary alluvium as float.

6.3 SPRING VALLEY SITE

Power transmission from the Spring Valley Site to the Gonder Substation will be along the Gonder Alternate. Access south to the McCullough Switching Station consists of one corridor that splits in several places to form alternates. Starting at the Site, power transmission lines will run along either the Highway or the Baking Powder Flats Alternate. These join near the southern boundary of the County and split into the Muleshoe and Lake Valley Alternates. These rejoin in Linclon County and from this point south the route is as described in Section 6.1. Only a portion of the Lake Valley Alternate is described; use will be made of an existing powerline facilities along the remainder of the corridor.

6.3.1 Archaeology And History

6.3.1.1 Gonder Substation Corridors

The Gonder Alternate crosses the Schell Creek Range just south of Connors Pass and then runs north along the eastern edge of Steptoe valley, past Ely and on to the Gonder Substation. Approximately equal portions of the alternate are located in pinyon/juniper woodlands and the lower sagebrush dominated areas. The only moderately well watered portion of the alternate is in Steptoe Valley, but much of this area has been badly disturbed. Few if any Pre-Archaic or Fremont period archaeological sites should be found along this alternate. The Archaic and Post-Fremont sites that are found will tend to be situated along the contact zone between the pinyon/juniper woodland and the sage area. Historic period resources in both Spring and Steptoe Valley will be dominated by agricultural and ranching activities. Some mining related materials may be present in Steptoe Valley since the townsite of Timberlaine (ca. 1869) is located just outside the alternate.

Quite a bit of archaeological survey work has been completed along the path of the Gonder Alternate (see Table 6-29). A majority of the projects were in the Steptoe Valley segment of the alternate, especially to the north and east of Ely. In spite of all this work, however, very few sites have been found (see Table 6-30). Two of the three sites were found in Spring Valley along the pinyon/sage ecotone. The existing data clearly suggest that site density along this alternate will be low. No sites

presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Gonder Alternate.

6.3.1.2 McCullough Switching Station Corridors

Although the Highway and the Baking Powder Flat Alternates are very close to one another, they should have somewhat different archaeological signatures. The Highway Alternate is higher up on the pediment and runs along the sage/pinyon ecotone. The Baking Powder Flat Alternate is situated more in the valley bottom and straddles the margins of a former pluvial lake. If Pre-Archaic period sites are found, they should be in the Baking Powder Flat Alternate. Archaic and Post-Fremont period sites, on the other hand, should be more abundant in the Highway Alternate. Neither alternate should contain abundant historic resources and those present will relate to ranching and agriculture.

Examination of Tables 6-31 through 6-33 reveal that while an equivalent amount of work has been completed in each of the alternates, cultural sources have been recorded for only the Baking Powder Flat Alternate. All of the sites recorded are small in size. Two are identifiable as to cultural affiliation; 26WP1295 is an Archaic period task site and 26WP1096 has both a Fremont and a Post-Fremont component present. No Pre-Archaic period sites were noted. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the either alternate.

Neither the Muleshoe nor the Lake Valley Alternate extends into White Pine County. As a result, the predictive model was not applied. As discussed in Section 6.1, only a portion of the Lake Valley Alternate is evaluated. Of concern is that section which runs down the eastern flank of Lake Valley to where the alternate intercepts the IPP transmission line route. Tables 6-34 through 6-37 reveal that numerous projects have been conducted along each of the alternates. When the length of each is considered, the Muleshoe Alternate stands out as the better studied. The listing of sites found along this alternate (see Table 6-34) shows a tendency for historic sites to be abundant. Of the prehistoric sites, all but one are small task sites. The one exception is a Post-Fremont period field camp site. The list of sites found in the Lake Valley Alternate is far more extensive; 30 sites are recorded in the path of the alternate

(see Table 6-37). With very few exceptions, however, the sites are small and widely scattered. Few are identifiable as to cultural affiliation. The assignable sites date to the Archaic and Post-Fremont periods. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to either alternate.

6.3.2 Paleontology

Access to the Gonder Substation will follow the Gonder Alternate which crosses Quaternary alluvium and playa deposits for over 80% of its route. Tertiary silicic ash flow tuffs, including thin air fall tuffs and sediments, are intercepted over approximately 4% of the corridor. Carbonates of Devonian age (e.g. Sevey dolomite) and dolomitic Ely Springs are intercepted over approximately 13% of the linear distance. These are ranked as having moderate to high paleontological potential, although no known sites are crossed by this corridor.

Alternate corridors lead south from the Spring Valley Site to the McCullough Switching Station. The Highway, Baking Powder Flat, and Muleshoe Alternates lie almost entirely on Quaternary alluvium, with less than 10% crossing Devonian carbonate sediments (probably of the Nevada Formation). The Lake Valley Alternate is situated mostly on Quaternary alluvial and playa sediments (75%) of only limited paleontological potential. A limited amount of the alternate (15%) crosses Tertiary tuffaceous sedimentary rocks of high significance. The remainder intersects Tertiary silicic ash tuffs of moderate potential. No known paleontological localities are intercepted by either alternate.

7.0 COAL TRANSPORTATION SYSTEM ARCHAEOLOGY, HISTORY, AND PALEONTOLOGY

The location of the coal transportation two-mile-wide study corridors is shown on Figure 7-1. Separate railroad corridors were developed that run north to tie into the Southern Pacific or Western Pacific Railroad lines and south to tie into the Union Pacific Railroad lines.

Throughout this chapter, the term "site" is used frequently. In order to avoid confusion, "Site" (capitalized) will refer to the Butte Valley Site, North Steptoe Valley Site, and the Spring Valley Site while "site" (not capitalized) will denote locations of archaeological or historical importance.

7.1 BUTTE VALLEY SITE

Two alternates are proposed for the northern corridor leading from the Butte Valley Site, one of which divides into two separate branches. The Egan Creek Pass Alternate will run from the Site and tie into the Nevada Northern Railroad near Cherry Creek. This alternate is essentially the same as the Egan Basin Alternate (see Section 6.2.1) and the water pipeline route (see Section 5.1.1) between Steptoe and Butte Valleys. Since the corridor has already been evaluated, no further discussion is provided here. The Butte Valley North Alternate runs north and ultimately ties into the Nevada Northern near the Mizpah Siding. Northwest of Palomino Ridge, the Clover Valley Alternate continues north and ties in with the Western Pacific Railroad at Wells. A branch to this alternate, the Spruce Mountain Alternate ties in with the Western Pacific at the Ventosa Siding. The Butte Valley South Alternate leads south through Jakes and the White River Valleys, turns east, goes through Bristol Pass, and proceeds on to Pioche. There are no alternate corridors to the southern corridor.

7.1.1 Archaeology And History

Information derived from the predictive model is available for only portions of the north and south corridors as both extend well outside White Pine County. The predictive model suggests that cultural resources found along the Butte Valley South Alternate will be quite varied. Site density in the White River area and around the margin of Jakes Valley should be high.

Fremont period sites may be found adjacent to the White River. Jakes Valley, on the other hand, is known for its abundance of Pre-Archaic and Archaic period sites. The corridor crosses the Hamilton to Cherry Creek stageline route in the vicinity of the 30 Mile Station (active ca. 1869). White River Valley is an active agricultural area and sites dating to the early days of this industry may well be present. Preston, one of the County's first exclusively agricultural communities, is situated just outside the proposed corridor.

A large number of archaeological investigations have taken place in or cross the Butte Valley South Alternate (see Table 7-1). This is to be expected since the alternate is approximately 160 miles in length. Seismic lines, highway material pits, and MX related projects are the most predominant activities that resulted in archaeological surveys. Of the numerous sites located during these surveys (see Table 7-2), only a few are identifiable as to cultural affiliation: eight date to the historic period, six to the Archaic period, two to the Post-Fremont period (both sites also have Archaic components), and one (in Jakes Valley) to the Pre-Archaic. Almost all the Archaic and Post-Fremont sites are situated around the Thirty Mile ranch; water is available there in the form of several springs. This cluster accounts for over a quarter of the sites recorded along the entire alternate. No other similarly high concentration of sites was noted elsewhere along the alternate. The majority of the remaining recorded sites are small scatters or isolated finds. These data suggest that site density along the alternate may be moderate, but that the majority of sites encountered will not be large or complex. Larger sites, either individually or in clusters, will be focused around water sources. Historic period sites appear to be frequent.

No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Butte Valley South Alternate. However, Bristol Wells (Bristol City) National Historic District is adjacent to the alternate near where it passes through Bristol Pass. The alternate passes well to the north of the highly significant White River Narrows National Register site. Site 26WP1177 (the Pre-Archaic period site in Jakes Valley) is considered eligible to the Register by James and Zeier (1981). Busby et al. (1980) feel that the Archaic period sites 26WP1124 and 26WP1131 near 30 Mile station are eligible. Historic period

resources in the station area may likewise be eligible. Historic properties on and eligible to the Register are present in and around Pioche, the southern terminus of the alternate.

The predictive model suggests that the Butte Valley North Alternate will not exhibit as high a degree of cultural resource variability as the south alternate. The alternate is generally above the high stand of the pluvial lake in Butte Valley and Pre-Archaic sites should be few in number. Archaic and Post-Fremont period sites should be the most prevalent. The absence of permanent water along the route suggests that sites will be small in size. The predictive model reveals that site density along this alternate will be lower than that projected for the Butte Valley South Alternate. The alternate does cross the Pony Express route and the Butte Station is located just outside the corridor. Ranching and agricultural activities may be prevalent.

Several previous archaeological projects have been undertaken in and around the alternate (see Table 7-3). Most of these were conducted in advance of seismic studies. Taking their respective lengths into consideration, the north and south Butte Valley alternates have received a similar level of archaeological attention. Given this observation, it is interesting to note that a greater number of sites have been recorded along the northern corridor (see Table 7-4) and that the majority of these were found in Elko County (at the north end of Butte Valley and on Dry Lake Flat). A majority of the sites are small and many of those in Elko County are isolated finds. Sites along the western edge of Butte Valley are situated well off the valley floor at the upper edges of the pediment. Six sites are identifiable as to cultural affiliation, three of which are historic. Of the identifiable prehistoric sites, one is Archaic, one is Post-Fremont, and the other has both periods represented. The two sites with Archaic components are large base camps. Odgers Ranch Indian Reserve is located adjacent to the corridor and areas around the Reserve may potentially be of interest to the Native Americans living there. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Butte Valley North Alternate. The two Archaic period base camps (26EK1947 and BLM 4-2050) may well be eligibile to the Register.

Both the Clover Valley and Spruce Mountain Alternates lie totally outside White Pine County, therefore the predictive model

is not applied. Existing data relative to the Clover Valley Alternate are provided in Tables 7-5 and 7-6. The most extensive archaeological surveys conducted in the area were in advance of seismic studies. Given the limited amount of work done, a fair number of sites have been recorded and several can be identified as to cultural affiliation. All four prehistoric periods are represented. No historic period sites have been recorded. Four of the recorded sites are quite extensive and may be eligible to the National Register of Historic Places. No sites presently listed on or determined eligible to the Register are located in or immediately adjacent to the Clover Valley Alternate.

The Spruce Mountain Alternate presents a different picture from that of the Clover Valley Alternate. Fewer projects have been undertaken along the Spruce Mountain Alternate (see Table 7-7) and the number of sites recorded to date is lower (see Table 7-8). Only three sites are noted, two of which date to the historic period. The conclusion drawn from these very limited data is that prehistoric site density is lower along the Spruce Mountain Alternate and that historic period site density is higher. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Spruce Mountain Alternate and none of the sites listed in Table 7-10 are considered eligible.

7.1.2 Paleontology

The Butte Valley North Alternate passes through areas predominantly covered by Quaternary alluvium (96%) with traces of Tertiary lacustrine sediments (of high potential) and Cenozoic volcanic andesites (of very low potential). Neither of the two alternates to the Butte Valley North Alternate were rated as having very high potential.

The Egan Creek Pass Alternate is essentially the same as the Egan Basin Alternate previously discussed in Section 6.1.2 and no further discussion of the alternate is provided.

The Butte Valley South Alternate crosses primarily Quaternary alluvium (80%) of limited paleontological potential. More highly rated Tertiary lacustrine sediments are, however, intersected. The corridor crosses several strata of moderate paleontological potential; Mississippian clastics, lower Pennsylvanian to Permian siltstones and sandstones, tuffaceous

sedimentary units, and Devonian clastics. Intrusive Tertiary volcanics of very low potential are also intercepted.

7.2 NORTH STEPTOE VALLEY SITE

Corridors associated with the North Steptoe Valley Site make considerable use of existing rail facilities, namely the Nevada Northern Railroad which runs between Ely and Cobre. The Steptoe Valley North Alternate runs entirely along this existing corridor. However, an alternate is proposed that runs northeast through the Schell and Antelope Valley Alternates. The Steptoe Valley South Alternate will require the extension of the Nevada Northern south out of Ely through Steptoe and Cave Valleys, across the Schell Creek Range, and into Lake Valley. Corridors defined around existing Nevada Northern rights-of-way are evaluated based on the assumption that modifications and upgrading of the facility will be required.

7.2.1 Archaeology And History

A major cultural resource that will require careful consideration during the evaluation of all Steptoe Valley corridors is the Nevada Northern railroad. This is the best existing representative of the short line rail operation that played such an important part in the early history of Nevada. All aspects of the line are present and many remain as they were originally constructed: the route of the line, the offices and maintenance shops in East Ely, the rolling stock (many of the early pieces have been stored in East Ely), and numerous smaller structures and pieces of equipment. The Nevada Northern railroad system is of historic significance and elements thereof are eligible to the National Register of Historic Places.

Information derived from the predictive model is available for portions of the two main alternates and the Schell Alternative. In the southern half of the County, the Steptoe Valley South Alternate skirts along the line of transition between the sage and pinyon/juniper vegetation zones. This contact area should exhibit a higher site density than the lower sage zone. Between Ely and the Site, the corridor passes through several well watered areas and, again, site density should be high. Several thermal springs are present and these may potentially be of significance to local Native Americans. Aside from the Nevada Northern, the corridor may affect historic period

cultural resources in the vicinity of Ely and where it passes near the Ward mining district. A 1930s CCC camp is located adjacent to the corridor southeast of Ely.

Table 7-9 shows that a variety of archaeological projects has been carried out along the Steptoe Valley South Alternate. Several small projects are clustered in the area to the east and northeast of Ely. The remaining projects are scattered along the course of the alternate. A substantial number of cultural resources have been recorded as a result of these surveys (see Table 7-10). Only two belong to the historic period, only one of which is located in the County. Ten prehistoric sites are assignable to a period; six date to the Archaic period, two to the Post-Fremont period, and two sites exhibit multiple occupations (Fremont/Post-Fremont, Archaic/Post-Fremont). With few exceptions, most sites are small. Base camp sites are not present in the sample. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Steptoe Valley South Alternate. Busby et al. (1980) consider sites 26WP1925, 1945, and 1947 (located in Cave Valley) eligible to the Register.

Only a short segment of the Steptoe Valley North Alternate is situated in White Pine County and the predictive model is of little value in suggesting what will be found in the alternate. Springs and marshy areas around the Goshute Lake area should have the affect of increasing site density. The Steptoe Valley North Alternate will make the most use of existing Nevada Northern railroad facilities.

Fewer projects have been undertaken along the Steptoe Valley North Alternate than the southern alternate (see Table 7-11). This is to be expected, however, since the northern corridor is only half the length of the one to the south. Seismic line studies are predominate, accounting for almost three quarters of all work done in the area. Most of the projects and all of the sites recorded within the alternate are located in Elko County (see Table 7-12). Three of the sites are historic; one is a campsite, another is a cemetery, and the third is a dump. A similar number of prehistoric sites were assignable to a period. Two date to the Post-Fremont period, while the third contains both an Archaic and a Fremont component. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the

Steptoe Valley North Alternate. Sites 1-2251, 1-2252, and 26EK1835 should be examined in more detail to determine their eligibility to the Register.

Existing data for the Schell Alternate are restricted in number. Only three projects are found in or cross the path of the alternate, and only one site has been recorded to date (see Tables 7-13 and 7-14). This site is a multicomponent prehistoric site located in the northeastern corner of the Site, the point of origin for the Schell Alternate. These scant data do not allow for detailed discussion of site distribution or density. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Schell Alternate. James and Zeier (1981) consider 26WP1203 eligible to the National Register.

The situation for the Antelope Alternate is little better, expecially considering that this corridor is nearly four times the length of the Schell Alternate. With a single exception, all projects in the path of the Antelope Alternate were conducted in advance of seismic exploration activities (see Table 7-15). Sites recorded to date are listed in Table 7-16. None are identifiable as to period, and three are isolated finds. These data suggest that site density will be quite low and that most of those sites found will be small, often restricted to a single flake or artifact. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Antelope Alternate.

7.2.2 Paleontology

The Steptoe Valley North Alternate is situated mostly on Quaternary alluvial deposits (90%). The remainder is made up of Tertiary lacustrine deposits of high paleontological potential.

The Antelope Alternate lies largely on Quaternary alluvial and playa deposits (92%), the remainder is on Tertiary intrusives and Cenozoic volcanics of very low potential. The Schell Alternate is totally on Quaternary deposits.

The Steptoe Valley South Alternate will pass through areas mostly covered with Quaternary alluvial and playa deposits (98%). Only traces of Devonian carbonates, lower Pennsylvanian to Permian siltstones and sandstones, Tertiary ash flow tuffs (all

of moderate paleontological potential), and tertiary intrusives (of very low potential) are crossed.

7.3 SPRING VALLEY SITE

The Spring Valley North Alternate runs the length of Spring Valley, around the northern edge of Steptoe Valley, and ties into the Nevada Northern Railroad near Currie. At the northern end of the corridor are two alternate branches, the Currie and Antelope Valley Alternates. The Spring Valley South Alternate extends south through Baking Powder Flats and along the west edge of Lake Valley, terminating at Pioche. Two alternates are proposed for consideration. The Lake Valley Alternate will pass along the east edge of the valley and across Cedar Flat. The Patterson Alternate, at the southern end of the corridor, will follow Patterson Wash and terminates just east of Pioche.

7.3.1 Archaeology And History

Information derived from the predictive model is available for only the short segment of the Spring Valley South Alternate, situated within the County, while virtually all of the north corridor is located within the confines of the County. The other alternates listed above lie outside White Pine County and can not be evaluated using the predictive model.

The predictive model indicates that the Spring Valley South Alternate will pass through areas of only moderate potential for archaeological sites. The corridor is situated above the uppermost beach strand and terraces left by ancient pluvial lakes and below, for the most part, the pinyon/juniper vegetation zone. Where the corridor crosses into the pinyon/juniper, site density should increase. If Pre-Archaic sites are present, they will be found down along the old pluvial terraces, while Archaic and Post-Fremont sites will be more abundant further up on the piedmont. Some historic agricultural and ranching site may be present in the corridor, however, most such activities in the valley have taken place along its eastern margin.

A listing of previous archaeological projects undertaken in the path of the Spring Valley South Alternate is provided in Table 7-17. A majority of these projects took place in Lincoln County. This work has resulted in the discovery of numerous cultural resources (see Table 7-18). Although the majority are

small in size, there is a fair number of moderately sized sites along the alternate. No large base camp sites are recorded, however. Virtually all the recorded sites are located in the Lincoln County portion of the alternate. Several sites are identifiable as to cultural affiliation. Five date to the Archaic period, three to the Post-Fremont period, two have mixed Archaic and Post-Fremont occupations, one has mixed Pre-Archaic and Historic components, and yet another belongs to the Historic period. Review of these data suggests that site density is highest along the edge of the piedmont near the pinyon/sage ecotone (Busby et al. 1980). No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Spring Valley South Alternate. Sites 4-1058, 2081, 2083, 2087, and 2089 may warrent further investigations in order to determine their eligibility.

At first glance, less archaeological survey work has been done along the Lake Valley Alternate (Table 7-19). Given its length, however, this and the Spring Valley South Alternate have received essentially equal attention. The listing of sites recorded within the Lake Valley Alternate is provided in Table 7-20. With only one exception, all the sites recorded to date are small prehistoric task sites. Many are isolated finds. Only one is identifiable as to probable cultural affiliation. Ceramics of an unknown type are present at the site and, therefore, it dates to either the Fremont or the Post-Fremont period. In general, these data suggest that while site density along the Lake Valley Alternate is similar to that of the Spring Valley South Alternate, the sites contain less data and represent very limited periods of occupancy. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Lake Valley Alternate.

Data pertaining to the Patterson Alternate (Tables 7-21, 7-22) reveal similar trends as the Lake Valley Alternate. Sites are small, widely distributed, and are seldom identifiable as to cultural affiliation. A camp site dating to the Archaic period is the single recorded exception from this pattern. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Patterson Alternate. Site 4-966 should be investigated to determine its eligibility to the Register.

According to the predictive model, the Spring Valley North Alternate should have a wider range of cultural resources present than is found along the southern route. The corridor frequently crosses and often runs parallel to pluvial beach terraces dating to the late Pliestocene and the mid Holocene. Site density on these terraces should be higher than for other stretches of the corridor and sites dating to the Pre-Archaic are more likely here. At the northern end of Spring Valley the corridor nears stands of pinyon/juniper; Archaic and Post-Fremont period sites should be more abundant here. Several caves are recorded for the mountains east of the corridor near Highway 50 that may potentially be of significance to local Native Americans. More important, however, the possible 1863 site at which a cavalry unit from Fort Ruby attacked and killed a number of Indians is situated within the bounds of the alternate. Local Indian groups place a very high value on this location and feel that it should not be violated in any way (Facilitators 1980). The alternate crosses the Pony Express route and the site of the Spring Valley station is within its bounds. It also runs along the edge of the Osceola mining district and the corridor may contain small historic sites dating to the period from 1870 to the early 1900s.

Comparison of the North and South Spring Valley Alternates reveals that the northern corridor has received less archaeological attention; far fewer projects have been undertaken (see Table 7-23). This disparity is even more pronounced when the lengths of the alternates are taken into consideration. Most of the recorded work has been done in the central part of Spring Valley and in Elko County. Of the sites recorded to date (see Table 7-24), only six are identifiable as to cultural affiliation. Three are historic period sites and all are located in Spring Valley. Two of the prehistoric sites date to the Post-Fremont period while the third site has both a Fremont and a Post-Fremont component present. In addition, a major source of stone for the making of artifacts is located within the bounds of the alternate in Elko County. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Spring Valley North Alternate. Several sites deserve further attention in order to determine their eligibility to the Register. These include sites 1-1895, 4-695, and 4-866. Site 4-159, the possile 1863 battleground, is considered eligible if its exact location can be determined.

The Currie Alternate is quite short, and little previous work has been done along the route (see Table 7-25). Seismic projects are clearly predominant. Table 7-26 reveals that several sites are located along the alternate but only one is identifiable as to cultural affiliation, an historic period horse trap. Sites dating to the prehistoric period tend to be larger than those along several of the surrounding alternates. No sites presently listed on or determined eligible to the National Register of Historic Places are located in or immediately adjacent to the Currie Alternate.

7.3.2 Paleontology

The Spring Valley North Alternate is almost totally on Quaternary alluvial deposits (98%). The remainder is on Tertiary intrusives of very low paleontological potential. The Spring Valley South Alternate enjoys a slightly higher degree of paleontological significance due to its crossing of some lower Pennsylvanian to Permian siltstones and sandstones and Tertiary lacustrine sediments (15%). The remainder of the route is on Quaternary deposits. The Lake Valley Alternate is totally on Quaternial alluvial deposits. The Patterson Alternate, on the other hand, runs through deposits dominated (80%) by Tertiary lacustrine sediments which are frequently fossiliferous and have a high paleontological potential.

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TABLES

TABLE 4-1
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE BUTTE VALLEY SITE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-133(n)	1977	seismic lines	no
4-204(n)	1978	oil drilling location	no
4-266(p)	1978	water well location	yes
4-478(p)	1981	WPPP Class II survey	yes
4-490(p)	1981	oil drilling location	no
4-494(p)	1981	WPPP meteorology sta.	no
4-522(p)	1982	WPPP geophysical sta.	no
4-554(p)	1982	seismic lines	no

TABLE 4-2
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE BUTTE VALLEY SITE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
	4-697	task site	-	4-266(p)
26WP1160	4-1860	task site	-	4-478(p)
26WP1161	4-1861	field site	-	4-478(p)
26WP1162	4-1862	-	historic	4-478(p)
26WP1163	4-1863	task site	-	4-478(p)
26WP1164	4-1864	field site	archaic/historic	4-478(p)
26WP1165	4-1865	-	historic	4-478(p)
26WP1166	4-1866	-	historic	4-478(p)

TABLE 4-3
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE NORTH STEPTOE SITE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-190(n)	1977	highway material pits	no
4-419(p)	1981	seismic lines	yes
4-478(p)	1981	WPPP Class II survey	yes
4-494(p)	1981	WPPP meteorology sta.	no
4-522(p)	1982	WPPP geophysical sta.	yes

TABLE 4-4
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE NORTH STEPTOE VALLEY SITE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26WP1199	4-1899	task site	-	4-478(p)
26WP1200	4-1900	task site	-	4-478(p)
26WP1201	4-1901	task site	-	4-478(p)
26WP1202	4-1902	task site	-	4-478(p)
26WP1203	4-1903	base site	Archaic/Numic	4-478(p)
26WP1204	4-1904	task site	-	4-478(p)
26WP1205	4-1905	field site	-	4-478(p)
26WP1206	4-1906	task site	-	4-478(p)
26WP1207	4-1907	task site	Pre-Archaic	4-478(p)
26WP1208	4-1908	task site	-	4-478(p)
26WP1209	4-1909	field site	-	4-478(p)
26WP1210	4-1910	field site	Archaic	4-478(p)
26WP1211	4-1911	task site	-	4-478(p)
26WP1212	4-1912	task site	Numic	4-478(p)
26WP1213	4-1913	base site	-	4-478(p)
26WP1214	4-1914	base site	Archaic	4-478(p)
26WP1215	4-1915	task site	-	4-478(p)
26WP1216	4-1916	task site	-	4-478(p)
26WP1217	4-1917	task site	Archaic (?)	4-478(p)
26WP1218	4-1918	-	Historic	4-478(p)
26WP1219	4-1919	task site	-	4-478(p)
26WP1220	4-1920	task site	-	4-478(p)
26WP1221	4-1921	task site	-	4-478(p)
26WP1222	4-1922	task site	-	4-478(p)
26WP1223	4-1923	task site	Numic	4-478(p)
26WP1224	4-1924	field site	-	4-478(p)
26WP1225	4-1925	task site	-	4-478(p)
26WP1257	4-1324	task site	-	4-419(p)
26WP1258	4-1325	task site	-	4-419(p)
---	4-1795	task site	-	4-522(p)

TABLE 4-5
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE SPRING VALLEY SITE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-283(p)	1978	seismic lines	no
4-295(p)	1979	seismic lines	no
4-338(p)	1979	seismic lines	yes
4-361(p)	1980	geotechnical sites	no
4-447(n)	1981	fenceline	no
4-476(p)	1981	aggragate pits	no
4-478(p)	1981	WPPP Class II survey	yes
4-494(p)	1981	WPPP meteorology sta.	yes
4-522(p)	1982	WPPP geophysical sta.	no

TABLE 4-6
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE SPRING VALLEY SITE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
---	4-827	task site	Archaic	4-338(p)
26WP1244	4-1944	base site	Fremont	4-478(p)
26WP1245	4-1945	task site	-	4-478(p)
26WP1246	4-1946	task site	-	4-478(p)
26WP1247	4-1947	base site	Numic	4-478(p)
26WP1248	4-1948	task site	-	4-478(p)
26WP1249	4-1949	base site	Numic	4-478(p)
26WP1250	4-1950	field site	-	4-478(p)
26WP1251	4-1951	base site	Archaic	4-478(p)
26WP1252	4-1952	task site	-	4-478(p)
26WP1253	4-1953	field site	-	4-478(p)
26WP1254	4-1954	task site	-	4-478(p)
26WP1255	4-1955	task site	-	4-478(p)
26WP1256	4-1956	-	Historic	4-478(p)
---	4-1624	task site	-	4-494(p)

TABLE 5-1
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE BUTTE VALLEY WELL FIELDS

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
NORTHWEST			
4-133(n)	1977	seismic lines	no
4-435(p)	1981	geotechnical studies	no
4-478(p)	1981	WPPP Class II survey	yes
4-552(n)	1982	pipeline	no
4-554(p)	1982	seismic lines	no
NORTHEAST			
4-133(n)	1977	seismic lines	no
4-186(n)	1977	horse trap	no
4-277(p)	1978	BLM study	yes
4-434(p)	1981	seismic lines	no
4-435(p)	1981	geotechnical studies	no
4-500(p)	1980	MX Class II study	yes
SOUTH			
4-133(n)	1977	seismic lines	no
4-277(p)	1978	BLM study	yes
4-434(p)	1981	seismic lines	no
4-435(p)	1981	geotechnical studies	no
4-472(p)	1981	aquifer studies	no
4-494(p)	1981	WPPP meteorology sta.	no
4-500(p)	1980	MX Class II study	no

TABLE 5-2
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE BUTTE VALLEY WELL FIELDS

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
NORTHWEST				
26WP1166	4-1866	-	historic	4-478(p)
NORTHEAST				
26WP1120	4-2026	task	-	4-500(p)
---	4-168	historic trail	stage line	4-277(p)
SOUTH				
---	4-168	historic trail	stage line	4-277(p)

TABLE 5-3
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO SELECTED NORTH STEPTOE VALLEY WELL FIELDS

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
NORTHERN			
4-190(n)	1977	material pit	no
4-478(p)	1981	WPPP Class II survey	yes
4-522(p)	1982	WPPP geophysical sta.	yes
4-494(p)	1981	WPPP meteorology sta.	no
nsm 17-183		seismic lines	yes
CENTRAL			
4-62(p)	1976	drill site	yes
nsm 17-183		seismic lines	no
4-351(p)	1980	well locations	yes
4-525(p)	1982	WPPP test well	no
SOUTHERN			
4-51(p)	1976	geothermal wells	no
4-209(p)	1978	geothermal wells	yes
PIPELINE			
4-133(n)	1977	seismic lines	no
4-164(p)	1977	pipeline	no
4-165(p)	1977	horse trap	no
4-186(n)	1977	horse trap	no
4-204(p)	1978	drilling location	no
4-209(p)	1978	geothermal wells	yes
4-265(p)	1978	Cherry Creek URA	yes
4-277(p)	1978	BLM study	yes
4-308(p)	1979	well development	yes
4-351(p)	1980	geothermal holes	no
4-389(p)	1980	geotechnical studies	no
4-414(n)	1981	material pit	no
4-419(p)	1981	seismic line	no
4-434(p)	1981	seismic lines	no
4-435(p)	1981	geotechnical studies	no
4-544(p)	1982	cattle gaurd	no
4-554(p)	1982	seismic lines	no

TABLE 5-4
CULTURAL RESOURCES PREVIOUSLY RECORDED IN SELECTED NORTH STEPTOE VALLEY WELL FIELDS

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
NORTHERN				
26WP1257	NSM			
26WP1258	NSM			
26WP1203	4-1903	task	-	4-478(p)
26WP1205	4-1905	field	-	4-478(p)
26WP1210	4-1910	field	archaic	4-478(p)
26WP1211	4-1911	task	-	4-478(p)
26WP1212	4-1912	task	numic	4-478(p)
26WP1213	4-1913	base	-	4-478(p)
26WP1219	4-1919	task	-	4-478(p)
26WP1220	4-1920	task	-	4-478(p)
26WP1221	4-1921	task	-	4-478(p)
26WP1222	4-1922	task	-	4-478(p)
26WP1223	4-1923	task	numic	4-478(p)
26WP1224	4-1924	field	-	4-478(p)
CENTRAL				
26WP758	4-251	task	-	4-62(p)
26WP973	4-920	task	-	4-351(p)
26WP974	4-921	task	-	4-351(p)
SOUTHERN				
26WP944	4-398	task	-	4-209(P)
PIPELINE				
---	4-168	trail	stage line	4-277(p)
---	4-177	station	stage line	4-308(p)
---	4-547	siding	historic rr	4-265(p)
26WP641	4-166	Ft. Pierce graveyard	hist.	
26WP682				
26WP857		task	-	4-174(p)
26WP975		task	-	4-351(p)
---	---	townsite	historic	
---	---	station	historic rr	

TABLE 5-5
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE NORTHERN STEPTOE VALLEY WELL FIELDS

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
WELL FIELD 1			
none reported			
WELL FIELD 2			
see Table 5-3, Northern Field			
WELL FIELD 3			
see Table 5-3, Central Field			
WELL FIELD 4			
see Table 5-4, Southern Field			
WELL FIELD 5			
4-160(p)	1977	seismic lines	no
4-281(p)	1978	seismic lines	no
4-351(p)	1980	geothermal wells	no
4-354(p)	1980	seismic lines	no
4-358(p)	1980	seismic lines	no
4-419(p)	1981	seismic lines	no
4-478(p)	1981	WPPP Class II survey	yes
4-488(p)	1981	seismic lines	no

TABLE 5-6
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE NORTH STEPTOE VALLEY WELL FIELDS

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
WELL FIELD 1				
none reported				
WELL FIELD 2				
see Table 5-4, Northern Field				
WELL FIELD 3				
see Table 5-4, Central Field				
WELL FIELD 4				
see Table 5-4, Southern Field				
WELL FIELD 5				
26WP919		task	-	
26WP1226	4-1926	task	-	4-478(p)
26WP1227	4-1927	task	pre-archaic	4-478(p)
26WP1228	4-1928	task	-	4-478(p)
26WP1231	4-1931	task	-	4-478(p)
26WP1232	4-1932	field	pre-archaic	4-478(p)
26WP1236	4-1936	task	-	4-478(p)

TABLE 5-7
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE SPRING VALLEY WELL FIELDS

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
NORTWEST			
4-281(p)	1978	seismic lines	yes
4-426(n)	1981	fault line study	no
4-476(p)	1981	aggregate site	yes
4-524(n)	1982	WPPP well sites	no
4-557(p)	1982	highways betterment	yes
NORTHEAST			
4-157(p)	1977	seismic lines	yes
4-417(n)	1981	MX study	no
4-476(p)	1981	aggregate site	no
4-524(n)	1982	WPPP well sites	no
SOUTHWEST			
4-283(p)	1978	seismic lines	no
4-295(p)	1979	seismic lines	no
4-478(p)	1981	WPPP Class II survey	yes
4-522(p)	1982	WPPP geophysical sta.	no
SOUTHEAST			
4-295(p)	1979	seismic lines	no
4-338(p)	1979	seismic lines	no
4-478(p)	1981	WPPP Class II survey	yes

TABLE 5-8
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE SPRING VALLEY WELL FIELDS

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
NORTHWEST				
26WP904	4-865	ranch	historic	4-281(p)
26WP1292	4-1582	quarry	-	4-476(p)
	4-2547	task	-	4-557(p)
	4-2548	task	-	4-557(p)
NORTHEAST				
26WP876	4-371	task	-	4-157(p)
SOUTHWEST				
26WP1246	4-1946	task	-	4-478(p)
SOUTHEAST				
26WP1244	4-1944	field/base	Fremont	4-478(p)
26WP1245	4-1945	task	-	4-478(p)

TABLE 6-1
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE NORTH MACHACEK ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-10(p)	1974	BLM report	yes
4-133(n)	1977	soil test units	no
4-205(n)	1978	gravel pit	no
4-217/280(p)	1978	seismic lines	no
4-277(p)	1978	BLM report	yes
4-337(p)	1979	seismic lines	no
4-350(p)	1980	seismic lines	yes
4-368(p)	1980	powerline	no
4-372(p)	1980	seismic lines	yes
4-389(p)	1980	MX study	yes
4-411(p)	1981	seismic lines	yes
4-430(p)	1981	seismic lines	no
4-434(p)	1981	seismic lines	no
4-435(p)	1981	MX geotechnical station	no
4-439(p)	1981	MX geotechnical station	no
4-500(p)	1980	MX Class II	yes
4-515(p)	1981	geotechnical project	no
4-526(p)	1982	seismic lines	no
4-554(p)	1982	seismic lines	yes
4-559(p)	1982	well site	yes
4-561(p)	1982	seismic lines	no
4-568(p)	1982	seismic lines	no
4-580(p)	1982	seismic lines	no

TABLE 6-2
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE NORTH MACHACEK ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26WP316	4-25			4-10(p)
26WP381	4-25			4-10(p)
26WP382	4-25			4-10(p)
26WP385	4-27			4-10(p)
26WP386	4-27			4-10(p)
26WP389	4-573	field	---	4-10(p)
26WP391/392		base camp	---	4-10(p)
26WP930			---	4-10(p)
26WP933		isolated find	Archaic	4-10(p)
26WP961	4-908	task	---	4-350(p)
	4-1117	task	---	4-372(p)
	4-1305	field	---	4-411(p)
	4-1306	field	---	4-411(p)
26WP1067	4-2347	task	---	4-500(p)
26WP1072	4-2352	task	---	4-500(p)
	4-2580	task	---	4-559(p)
	4-2587	field	---	4-554(p)
	4-2588	task	---	4-554(p)
	4-2589	task	---	4-554(p)
		stage sta.	historic	4-277(p)

TABLE 6-3
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE JAKES VALLEY ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-389(p)	1980	MX study	yes
4-390(p)	1980	seismic lines	no
4-434(p)	1981	seismic lines	no
4-435(p)	1981	MX geotechnical station	no
4-472(p)	1981	aquifer study	no
4-488(p)	1981	seismic lines	no
4-500(p)	1980	MX Class II survey	yes
4-511(p)	1982	seismic lines	no
4-513(p)	1982	seismic lines	yes
4-515(p)	1982	geotechnical sites	no
4-527(p)	1982	powerline	no

TABLE 6-4
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE JAKES VALLEY ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
	4-1229	task	---	4-389(p)
	4-1849	task	---	4-513(p)
26WP1096	4-2002	task	---	4-500(p)
26WP1110	4-2016	task	---	4-500(p)
26WP1113	4-2017	task	---	4-500(p)
26WP1114	4-2020	field	---	4-500(p)
26WP1115	4-2121	task	---	4-500(p)
26WP1116	4-2022	task	---	4-500(p)
26WP1117	4-2023	task	---	4-500(p)

TABLE 6-5
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE FOOTHILL ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-155(p)	1977	seismic lines	yes
4-184(n)	1977	access road	no
4-279(p)	1979	seismic lines	no
4-293(n)	1979	highway material pit	no
4-311(p)	1979	MX geotechnical station	yes
4-352(p)	1980	seismic lines	yes
4-355(p)	1980	geothermal wells	yes
4-361(p)	1980	MX geotechnical station	yes
4-384(p)	1980	aquifer studies	yes
4-393(p)	1980	geotechnical studies	no
4-426(b)	1981	fault study	no
4-472(p)	1981	aquifer study	no
4-520(p)	1982	seismic lines	no
4-563(p)	1982	powerline	yes

TABLE 6-6
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE FOOTHILL ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26WP903	4-319	task	---	4-155(p)
26WP892	4-356	task	---	4-155(p)
26WP893	4-357	field	---	4-155(p)
26WP894	4-358	task	---	4-155(p)
26WP895	4-359	quarry	---	4-155(p)
26WP896	4-360	task	---	4-155(p)
26WP897	4-361	quarry	---	4-155(p)
	4-733	task	---	4-311(p)
	4-923	sheepherder camp	Historic	4-352(p)
	4-931	field	---	4-355(p)
	4-998	task	---	4-361(p)
26NY591	4-1184	task	Archaic	4-384(p)
	4-2601	field	---	4-563(p)

TABLE 6-7
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE PRESTON ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-129(n)	1977	seismic lines	no
4-192(n)	1977	cattle guard	no
4-201(n)	1978	seismic lines	no
4-217/280(p)	1978	seismic lines	no
4-243(n)	1978	cattle guard	no
4-309(p)	1979	seismic lines	no
4-311(p)	1979	MX geotechnical station	no
4-314(p)	1979	seismic lines	yes
4-352(p)	1980	seismic lines	yes
4-361(p)	1981	MX geotechnical station	yes
4-381(p)	1980	seismic lines	yes
4-393(p)	1980	geotechnical studies	no
4-465(p)	1981	highways betterment	yes
4-478(p)	1981	WPPP Class II survey	yes
4-505(p)	1982	powerline	yes
4-506(n)	1982	gravel pit	no
4-515(p)	1982	geotechnical studies	yes
4-520(p)	1982	seismic lines	no
4-532(p)	1982	highway material pits	no
4-563(p)	1982	powerline	yes

TABLE 6-8
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE PRESTON ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26NY464	4-752	task	---	4-314(p)
	4-923	sheepherder camp	Historic	4-352(p)
	4-990	task	---	4-361(p)
	4-998	task	---	4-361(p)
26NY591	4-1184	task	Archaic	4-381(p)
	4-1450	task	---	4-465(p)
	4-1451	field	---	4-465(p)
	4-1758			4-505(p)
	4-1759	task	---	4-505(p)
	4-1760	base	---	4-505(p)
26WP1183	4-1883	camp	Historic	4-478(p)
26WP1185	4-1885	task	---	4-478(p)
26WP1186	4-1886	task	---	4-478(p)
26WP1192	4-1892	field	Archaic	4-478(p)
26WP1193	4-1893	shell	Historic	4-478(p)
26WP1196	4-1896	field	Archaic	4-478(p)
26WP1197	4-1897	task	--/Historic	4-478(p)
26LN1198	4-1898	field	Archaic	4-478(p)
	4-1964	task	---	4-515(p)
	4-1968	task	---	4-515(p)
	4-1969	task	---	4-515(p)
	4-2601	task	---	4-563(p)

TABLE 6-9
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE COAL VALLEY ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-48(p)	1975	highway route	yes
4-281(p)	1978	seismic lines	yes
4-393(p)	1980	geotechnical studies	yes
4-426(p)	1981	fault study	yes
4-472(p)	1981	aquifer study	yes
4-500(p)	1980	MX Class II survey	yes
4-502(p)	1981	electrical study	yes
4-531(p)	1982	fenceline	yes
4-563(p)	1982	powerline	no

TABLE 6-10
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE COAL VALLEY ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26LN618	4-591	field	---	4-48(p)
26NY1255	4-664	field	Numic	
26NY1257	4-668	field	---	
26NY1689	4-859	task	---	4-281(p)
26LN1691	4-860	task	---	4-281(p)
26LN1692	4-861	task	---	4-281(p)
26LN1693	4-862	task	---	4-281(p)
26LN1694	4-863	task	---	4-281(p)
26LN1695	4-864	task	---	4-281(p)
	4-1252	task	---	4-393(p)
	4-1427	base	Numic	4-426(p)
	4-1573	task	---	4-472(p)
	4-1574	task	---	4-472(p)
	4-1575	task	---	4-472(p)
	4-1640	task	---	4-502(p)
26LN2067	4-2048	task	Archaic	4-500(p)
26LN2087	4-2068	task	---	4-500(p)
	4-2429			4-531(p)
	4-2430			4-531(p)
	4-2431			4-531(p)
	4-2432			4-531(p)

TABLE 6-11
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE WHITE RIVER VALLEY ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-361(p)	1980	MX geotechical station	no
4-370(p)	1980	aquifer study	no
4-375(n)	1980	highway material pit	no
4-474(n)	1981	highway material pit	no
4-492(p)	1981	highway material pit	yes
4-493(p)	1981	roadway	no
4-500(p)	1980	MX Class II survey	yes
4-515(p)	1981	MX geotechnical station	no

TABLE 6-12
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE WHITE RIVER VALLEY ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
	4-1620	task	---	4-492(p)
	4-1621	task	---	4-492(p)
	4-1622	dump	Historic	4-492(p)
26LN1885	4-2233	task	---	4-500(p)

TABLE 6-13
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE PAHROC ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
5-93(p)	1975	BLM survey	yes
5-911(n)	1981	pipeline	no

TABLE 6-14
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE PAHROC ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26LN2880		---	---	5-93(p)

TABLE 6-15
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE DELAMAR ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
5-408(p)	1978	seismic lines	no
5-790	1980	MX Class II survey	yes

TABLE 6-16
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE DELAMAR ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26LN653	---	telegraph line	Historic	
26LN1902	5-3340	task	Archaic	5-790

TABLE 6-17

PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE KANE SPRINGS ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
5-201(n)	1976	gravel pit	no
5-319(p)	1977	water development	yes
5-364(n)	1977	roadway	no
5-583(p)	1979	aquifer study	yes
5-683(p)	1980	MX Class II survey	yes
5-802(p)	1981	aquifer study	no
5-946(p)	1981	MX study	yes

TABLE 6-18

CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE KANE SPRINGS ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
	5-3174 5-3180 5-3373	task	-	5-683(p)
26LN251		field	Pre-Archaic	
26LN256	5-26	field	Pre-Archaic	
26LN258	5-208	base		
26LN705	5-3223	cabins	Historic	5-583(p)
26LN1618	5-491	field	-	5-319(p)
26LN2805	5-3604	task	-	5-946(p)

TABLE 6-19
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE DRY LAKE VALLEY ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
5-9(p)	1975	road race course	no
5-123(n)	1975	radar site	no
5-166(p)	1975	powerline	no
5-214(p)	1976	BLM report	yes
5-400	1982	IPP powerline	no
5-641(p)	1980	seismic lines	no
5-788(n)	1981	seismic lines	no
UNLV 5-35-4	1981	seismic lines	yes
5-1029(p)	1982	IPP powerline	yes
5-1049(p)	1982	IPP powerline	yes
5-1107(p)	1982	BLM report	yes

TABLE 6-20
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE DRY LAKE VALLEY ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26CK1336			-	
26CK1362	5-338	rockshelter	-	5-214(p)
26Ck1363	5-339	rockshelter	-	5-214(p)
26CK1364	5-340	rockshelter	-	5-214(p)
26CK1365	5-341	task	-	5-214(p)
26CK1660			-	
26CK1661	5-2246	rockshelter	-	
26CK1662	5-2247	task	-	
26CK1663	5-2248	field	-	
26CK2059		base	Anasazi	
26CK2205		task	-	5-35-4
26CK2206		task	-	5-35-4
26CK2207		rockshelter	-	5-35-4
26CK2217		rockshelter	-	5-35-4
26CK3029	5-4286	field	-	5-1049(p)
26CK3055	5-5313	task	-	5-1029(p)
26CK3092	5-4474	rockshelter	-	5-1107(p)

TABLE 6-21
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE RAILROAD PASS ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
5-64(n)	1975	gas pipeline	no
5-183(n)	1976	communication site	no
5-302(n)	1977	use permit	no
5-400(p)	1982	powerline	yes
5-404(p)	1978	powerline	no
5-657(p)	1980	powerline	no
5-899(n)	1981	highway improvement	no
5-1011(n)	1982	material pit	no
5-1030(p)	1983	waterline	no

TABLE 6-22
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE RAILROAD PASS ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26CK1169	5-2785	field	---	5-400(p)
26CK3024	5-4281		historic	5-400(p)
		townsite	historic	

TABLE 6-23
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE EGAN BASIN ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-133(n)	1977	seismic lines	no
4-164(p)	1977	pipeline	no
4-165(p)	1977	horse trap	no
4-186(n)	1977	horse trap	no
4-204(p)	1978	drilling location	no
4-209(p)	1978	geothermal wells	yes
4-265(p)	1978	Cherry Creek URA	yes
4-277(p)	1978	BLM study	yes
4-308(p)	1979	well development	yes
4-351(p)	1980	geothermal holes	no
4-389(p)	1980	geotechnical studies	no
4-414(n)	1981	material pit	no
4-419(p)	1981	seismic line	no
4-434(p)	1981	seismic lines	no
4-435(p)	1981	geotechnical studies	no
4-544(p)	1982	cattle gaurd	no
4-554(p)	1982	seismic lines	no

TABLE 6-24
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE EGAN BASIN ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
---	4-168	trail	stage line	4-277(p)
---	4-177	station	stage line	4-308(p)
---	4-547	siding	historic rr	4-265(p)
26WP641	4-166	Ft. Pierce graveyard	hist.	
26WP682				
26WP857		task	-	4-174(p)
26WP975		task	-	4-351(p)
---	---	townsite	historic	
---	---	station	historic rr	

TABLE 6-25
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE EGAN RANGE ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-12(p)	1975	fenceline	no
4-24(n)	1975	BLM study	no
4-51(p)	1976	geothermal wells	no
4-62(p)	1976	geothermal wells	yes
4-133(n)	1977	seismic lines	no
4-209(p)	1978	geothermal wells	yes
4-281(p)	1978	seismic lines	no
4-344(n)	1979	land sale	no
4-351(p)	1980	geothermal wells	yes
4-419(p)	1981	seismic lines	yes
4-435(p)	1981	MX geotechnical station	no
4-525(p)	1982	WPPP test wells	no
4-554(p)	1982	seismic lines	no

TABLE 6-26
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE EGAN RANGE ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26WP758	4-251	task	---	4-62(p)
26WP944	4-398	task	---	4-209(p)
	4-1326	field	Archaic	4-419(p)
	4-1327	task	---	4-419(p)
26WP971	4-918	cabin	Historic	4-351(p)
	4-3106			4-209(p)
	4-3116			4-209(p)
	4-3119		---	4-209(p)
	4-3120		---	4-209(p)
	4-3122		---	4-209(p)

TABLE 6-27
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE MULESHOE ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-1(n)	1974	chaining project	no
4-157(p)	1977	drilling site	yes
4-163(n)	1977	fenceline	no
4-207(p)	1978	IPP powerline	no
4-216(n)	1978	reservoir	no
4-249(p)	1978	BLM Study	yes
4-287(p)	1979	MX geotechnical sta.	yes
4-295(p)	1979	seismic lines	no
4-325(p)	1979	seismic lines	yes
4-330(n)	1979	reservoirs	no
4-339(p)	1980	roadway	yes
4-340(n)	1980	fenceline	no
4-361(p)	1980	MX geotechnical sta.	yes
4-368(p)	1980	powerline	no
4-373(p)	1980	seismic lines	no
4-386(p)	1980	geotechnical studies	no
4-427(p)	1981	seismic lines	no
4-431(n)	1981	aquifer study	no
4-436(p)	1981	seismic lines	no
4-438(p)	1981	pipeline	yes
4-476(p)	1981	aggregate site	yes
4-488(p)	1981	seismic lines	no
4-495(p)	1981	highway station	no
4-500(p)	1980	MX Class II survey	yes
4-510(p)	1982	seismic lines	no
4-514(n)	1982	seismic lines	no
4-518(p)	1982	highway material pit	yes
4-519(n)	1982	land sale	no
4-557(p)	1982	highway betterment	yes
18-24(NSM)			yes
18-132(NSM)			

TABLE 6-28
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE MULESHOE ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
	4-178	cabin	historic (1872)	
	4-186	mine	historic	
26WP877	4-372	task	-	4-157(p)
	4-628	cabins	historic	4-249(p)
	4-631	mine	historic	4-249(p)
	4-973	field	-	4-361(p)
	4-977	task	-	4-361(p)
	4-1052	task	-	4-339(p)
	4-1058	field	Numic	4-325(p)
	4-1213	task	-	4-287(p)
	4-1385	task	-	4-438(p)
26WP1299	4-1599	task	-	4-476(p)
26WP1289	4-1636	task	-	4-486(p)
	4-1817	task	-	4-518(p)
26LN1992	4-2084	-	historic	4-500(p)
26LN1872	4-2221	dump	historic	4-500(p)
	4-2549	rock wall	historic	4-557(p)
26WP904				18-24
		ranches	historic	

TABLE 6-29
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE GONDER ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-193(p)	1976	powerline	no
4-196(n)	1977	highway material pit	no
4-207(p)	1978	IPP powerline	yes
4-210(p)	1978	gravel pit	no
4-221(p)	1978	race course	no
4-255(n)	1978	highway project	no
4-281(p)	1978	seismic line	no
4-294(n)	1979	highway material pit	no
4-299(n)	1979	land sale	no
4-323(n)	1979	land sale	no
4-353(n)	1980	seismic lines	no
4-358(p)	1980	seismic lines	no
4-361(p)	1980	MX geotechnical sta.	no
4-383(p)	1980	material pit	no
4-387(p)	1980	geotechnical studies	no
4-419(p)	1981	seismic lines	no
4-420(n)	1980	highway material pit	no
4-423(p)	1981	BLM study	no
4-460(n)	1981	power line	no
4-475(n)	1981	material pits	no
4-476(p)	1981	aggregate study	no
4-496(n)	1981	highway material pits	no
4-511(p)	1981	seismic lines	no
4-548(p)	1982	power line	no
4-557(p)	1982	highways betterment	yes

TABLE 6-30
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE GONDOR ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26WP868	4-575	task	-	4-207(p)
	4-2550	dump	historic	4-557(p)
	5-2551	task	-	4-557(p)

TABLE 6-31
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE HIGHWAY ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-34(p)	1975	pipeline	no
4-207(p)	1978	IPP powerline	no
4-270(p)	1978	BLM study	no
4-283(p)	1978	seismic lines	no
4-401(n)	1980	gravel pit	no
4-417(n)	1981	MX study	no
4-460(n)	1981	power line	no
4-476(p)	1981	aggregate study	no
4-500(p)	1980	MX Class II survey	no

TABLE 6-32
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE BAKING POWDER FLAT ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-30(n)	1975	well location	no
4-65(p)	1976	horse trap	yes
4-207(p)	1978	IPP power line	no
4-257(n)	1979	drill site	no
4-269(p)	1978	seismic lines	no
4-283(p)	1978	seismic lines	no
4-476(p)	1981	aggregate study	yes
4-500(p)	1980	MX Class II study	yes

TABLE 6-33
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE BAKING POWDER FLAT ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26WP807	4-222	task	-	4-65(p)
26WP1295	4-1586	task	Archaic	4-476(p)
26WP1296	4-1587	task	Fremont/Numic	4-476(p)
26WP1048	4-2192	task	-	4-500(p)
26WP1049	4-2193	task	-	4-500(p)

TABLE 6-34
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE MULESHOE ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-163(n)	1977	fenceline	no
4-207(p)	1978	IPP powerline	no
4-216(n)	1978	reservoir	no
4-249(p)	1979	BLM study	yes
4-287(p)	1979	MX geotechnical station	yes
4-325(p)	1979	seismic lines	yes
4-330(n)	1979	reservoir	no
4-339(n)	1980	roadway	yes
4-340(n)	1980	fenceline	no
4-361(p)	1980	MX geotechnical station	yes
4-368(p)	1980	powerline	no
4-373(p)	1980	seismic line	no
4-386(p)	1980	geotechnical studies	no
4-427(p)	1981	seismic line	no
4-431(n)	1981	aquifer study	no
4-436(p)	1981	seismic line	no
4-438(p)	1981	pipeline	yes
4-476(p)	1981	aggregate study	yes
4-500(p)	1980	MX Class II survey	yes
4-510(p)	1982	seismic lines	no
4-514(n)	1982	seismic lines	no
4-518(p)	1982	highway material pit	no

TABLE 6-35
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE MULESHOE ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
	4-628	cabins	Historic	4-249(p)
	4-631	mine	Historic	4-249(p)
	4-973	task	---	4-361(p)
	4-1052	task	---	4-339(p)
	4-1058	field	Numic	4-325(p)
	4-1213	task	---	4-287(p)
	4-1385	task	---	4-438(p)
26WP1299	4-1599	task	---	4-476(p)
	4-1817	task	---	4-518(p)
26LN1992	4-2084	-	Historic	4-500(p)
26LN1872	4-2221	dump	Historic	4-500(p)

TABLE 6-36
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE LAKE VALLEY ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-159(p)	1977	highways material pits	no
4-207(p)	1978	IPP powerline	no
4-212(n)	1978	material pit	no
4-252(p)	1978	well site	yes
4-348(p)	1980	seismic lines	yes
4-360(p)	1980	seismic lines	no
4-363(p)	1980	fenceline	no
4-366(p)	1980	seismic line	yes
4-381(p)	1980	seismic lines	no
4-413(n)	1981	powerline	no
4-427(p)	1981	seismic lines	yes
4-360(p)	1980	seismic lines	no
4-446(n)	1981	race course	no
4-454(p)	1981	pipeline	yes
4-476(p)	1981	aggregate study	no
4-489(n)	1981	powerline	no
4-500(p)	1980	MX Class II survey	yes
4-510(p)	1982	seismic lines	yes
4-518(p)	1982	highways material pit	yes
4-530(p)	1982	telephone line	yes
4-558(p)	1982	seismic lines	no

TABLE 6-37
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE LAKE VALLEY ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
	4-652	task	---	4-252(p)
26LN1768	4-1046	task	---	4-348(p)
26LN1769	4-1047	task	---	4-348(p)
26LN1770	4-1048	task	---	4-348(p)
26LN1771	4-1049	task	---	4-348(p)
26LN826	4-1064	task	---	4-366(p)
26LN827	4-1065	task	---	4-366(p)
26LN868	4-1085	task	---	4-366(p)
26LN869	4-1086	task	---	4-366(p)
26LN870	4-1087	task	---	4-366(p)
	4-1420	----	---	4-454(p)
	4-1821	task	---	4-518(p)
26LN916	4-1824	task	---	4-427(p)
26LN917	4-1825	task	---	4-427(p)
26LN918	4-1826	task	---	4-427(p)
26LN914	4-1827	task	---	4-427(p)
26LN915	4-1828	field	---	4-427(p)
	4-1984	task	---	4-510(p)
	4-1986	task	---	4-510(p)
26LN1965	4-2129	task	---	4-500(p)
26LN1979	4-2143	task	---	4-500(p)
26LN1991	4-2083	task	Archaic	4-500(p)
26LN1994	4-2086	task	---	4-500(p)
26LN1995	4-2087	task	Archaic/Numic	4-500(p)
26LN1996	4-2088	task	Numic	4-500(p)
26LN1997	4-2089	task	---	4-500(p)
26LN1998	4-2090	task	---	4-500(p)
26LN1999	4-2091	task	---	4-500(p)
26LN2000	4-2092	task	Archaic/Numic	4-500(p)
	4-2440	task	---	4-530(p)

TABLE 7-1
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE BUTTE VALLEY SOUTH ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-49(n)	1976	highways material pit	no
4-129(n)	1977	seismic line	no
4-159(p)	1977	highways material pit	no
4-175(p)	1977	highway ROW	no
4-192(n)	1977	cattle guard	no
4-201(n)	1978	seismic line	no
4-207(p)	1978	IPP powerline	yes
4-216(n)	1978	reservoir	no
4-217/280(p)	1978	seismic lines	no
4-243(n)	1978	cattle guard	no
4-287(p)	1979	MX geotechnical station	yes
4-311(p)	1979	MX geotechnical station	no
4-314(p)	1979	seismic lines	no
4-339(p)	1980	roadway	yes
4-352(p)	1980	seismic lines	no
4-360(p)	1980	seismic lines	yes
4-361(p)	1980	MX geotechnical station	yes
4-368(p)	1980	powerline	no
4-370(p)	1980	MX aquifer study	no
4-373(p)	1980	seismic lines	no
4-375(n)	1980	highway material pits	no
4-381(p)	1980	seismic lines	no
4-386(p)	1980	MX geotechnical station	yes
4-389(p)	1980	geotechnical studies	no
4-390(n)	1980	seismic lines	no
4-393(p)	1980	MX geotechnical station	no
4-413(n)	1981	powerline	no
4-435(p)	1981	MX geotechnical station	no
4-465(p)	1981	highways betterment	yes
4-471(n)	1981	fenceline	no
4-472(p)	1981	MX aquifer study	no
4-474(n)	1981	highways material pits	no
4-476(p)	1981	aggregate site	yes
4-478(p)	1981	WPPP Class II survey	yes
4-488(p)	1981	powerline	no
4-492(p)	1981	highways material pit	yes
4-493(p)	1981	roadway	no
4-500(p)	1981	MX Class II survey	yes
4-503(p)	1982	MX fault trenches	no
4-505(p)	1982	powerline	yes
4-506(p)	1982	gravel pit	no
4-511(p)	1982	seismic lines	no
4-513(p)	1982	seismic lines	no

TABLE 7-1, Continued
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE BUTTE VALLEY SOUTH ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-515(p)	1982	geotechnical station	yes
4-520(p)	1982	seismic lines	no
4-527(p)	1982	powerline	yes
4-532(p)	1982	material pits	no
4-554(p)	1982	seismic lines	no
4-563(p)	1982	powerline	no
4-566(p)	1982	highways betterment	no

TABLE 7-2
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE BUTTE VALLEY SOUTH ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
	4-944	rr grade	historic	4-360(p)
	4-945	rr grade	historic	4-360(p)
	4-958	task	---	4-360(p)
	4-962	task	---	4-360(p)
	4-1004	task	---	4-361(p)
	4-1052	task	---	4-339(p)
	4-1126	task	---	4-476(p)
	4-1215	task	---	4-287(p)
	4-1227	task	---	4-386(p)
	4-1228	ox shoe	historic	4-386(p)
	4-1450	task	---	4-465(p)
	4-1451	task	---	4-465(p)
	4-1620	task	---	4-492(p)
	4-1621	task	---	4-492(p)
	4-1622	dump	historic	4-492(p)
	4-1758	task	---	4-505(p)
	4-1759	task	---	4-505(p)
26WP1177	4-1877	field	Pre-Archaic	4-478(p)
26WP1180	4-1880	---	---	4-478(p)
26WP1181	4-1881	---	---	4-478(p)
26WP1185	4-1885	---	---	4-478(p)
26WP1118	4-1898	---	---	4-478(p)
	4-1968	task	---	4-515(p)
	4-1969	task	---	4-515(p)
26WP1122	4-2027	task	---	4-500(p)
26WP1123	4-2028	task	---	4-500(p)
26WP1124	4-2029	field	Archaic/Numic	4-500(p)
26WP1125	4-2030	---	Historic	4-500(p)
26WP1126	4-2031	field	Archaic	4-500(p)
26WP1127	4-2032	field	Archaic/Numic	4-500(p)
26WP1128	4-2033	task	---	4-500(p)
26WP1129	4-2034	field	Archaic	4-500(p)
26WP1130	4-2035	---	Historic	4-500(p)
26WP1131	4-2036	field	Archaic/Numic	4-500(p)
26WP1132	4-2037	task	---	4-500(p)
26WP1133	4-2038	corral	Historic	4-500(p)
26LN1878	4-2227	task	Archaic	4-500(p)
26WP1321	4-2471	task	---	4-527(p)
26WP1322	4-2472	task/fenceline	---/hist	4-527(p)
26WP1333	4-2473	task	---	4-527(p)

TABLE 7-3
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE BUTTE VALLEY NORTH ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
1-57(P)	1975	well location	no
1-248(p)	1979	seismic lines	yes
1-251(p)	1979	seismic lines	no
1-452(p)	1981	seismic lines	yes
1-470(p)	1981	fenceline	yes
1-499(p)	1982	seismic lines	yes
1-519(p)	1982	seismic lines	yes
4-133(n)	1977	seismic lines	no
4-389(p)	1980	geotechnical studies	no
4-367(p)	1980	MX geotechnical sta.	yes
4-402(n)	1980	seismic lines	no
4-435(p)	1981	geotechnical studies	no
4-462(p)	1981	seismic lines	no
4-478(p)	1981	WPPP Class II survey	yes
4-485(p)	1981	BLM report	no
4-499(p)	1981	seismic lines	no
4-500(p)	1981	MX sample unit(s)	no
4-503(p)	1982	fault studies	no
4-509( )	1982	seismic lines	no
4-545(p)	1982	gravity survey	no
4-552(n)	1982	pipeline	no
4-554(p)	1982	seismic lines	no

TABLE 7-4
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE BUTTE VALLEY NORTH ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26EK1947	1-1353	base	Archaic	1-248(p)
	1-2050	base	Archaic/Numic	1-470(p)
	1-2070	field	---	1-470(p)
	1-2072	task	---	1-470(p)
	1-2170	task	---	1-452(p)
	1-2172	task	---	1-452(p)
	1-2176	task	---	1-452(p)
	1-2178	task	---	1-452(p)
	1-2179	field	---	1-452(p)
	1-2275	task	---	1-499(p)
	1-2316	task	---	1-519(p)
	1-2313	task	---	1-519(p)
	1-2314	task	---	1-519(p)
	1-2315	task	---	1-519(p)
	1-2359	task	---	1-519(p)
	1-2370	task	---	1-519(p)
	1-2371	field	---	1-519(p)
	1-2372	task	---	1-519(p)
	1-2373	field	---	1-519(p)
	1-2374	task	---	1-519(p)
	1-2375	task	---	1-519(p)
	1-2376	task	---	1-519(p)
	1-2377	task	---	1-519(p)
	1-2378	field	Numic	1-519(p)
	1-2379	task	---	1-519(p)
	1-2390	task	---	1-519(p)
	1-2391	task	---	1-519(p)
	1-2392	task	---	1-519(p)
	4-1762	field	---	4-462(p)
	4-1765	task	---	4-462(p)
	4-1766	tin can	historic	4-462(p)
	4-1767	task	---	4-462(p)
26WP1166	4-1866	---	historic	4-478(p)
	4-2584	task	---	4-554(p)
	4-2596	task	---	4-545(p)
	4-2597	task	---	4-545(p)
	4-2598	task	---	4-545(p)
	4-2635	pony express sta.	hist.	4-554(p)
26WP1136		task	---	4-367(p)
26WP1137		field	---	4-367(p)
26WP1138		task	---	4-367(p)

TABLE 7-5
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE CLOVER VALLEY ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
1-12(n)	1975	pipeline	no
1-13(n)	1975	pipeline	no
1-31(n)	1975	fenceline	no
1-48(p)	1975	fenceline	no
1-248(p)	1979	seismic lines	yes
1-261(n)	1980	highway ROW	no
1-291			no
1-344(p)	1980	seismic lines	no
1-439(n)	1980	highway material pit	no
1-452(p)	1981	seismic lines	no
1-514(p)			yes
1-519(p)	1982	seismic lines	yes

TABLE 7-6
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE CLOVER VALLEY ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26EK1925	1-1328	task	Numic	1-248(P)
26EK1926	1-1329	task	---	1-248(P)
26EK1928	1-1331	field/base	---	1-248(P)
26EK1929	1-1332	field/base	---	1-248(P)
26EK1931	1-1335	task	---	1-248(P)
26EK1932	1-1336	task	---	1-248(P)
26EK1933	1-1337	task	---	1-248(P)
26EK1934	1-1339	base	Archaic	1-248(P)
26EK1935	1-1340	task	---	1-248(P)
26EK1936	1-1341	task	---	1-248(p)
26EK1948	1-1354	task	---	1-248(p)
26EK1969	1-1375	task	Archaic	1-248(P)
26EK1970	1-1376	task	---	1-248(P)
26EK1971	1-1377	task	---	1-248(P)
26EK1977	1-1383	task	---	1-248(P)
26EK1982	1-1388	task	---	1-248(P)
26EK1983	1-1389	field	Pre-Archaic/Archaic	1-248(P)
	1-2316	task	---	1-519(p)
	1-2294			1-514(P)

TABLE 7-7
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE SPRUCE MOUNTAIN ALTERNATIVE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
1-48(p)	1975	fenceline	no
1-143(n)	1978	Army bivouac	no
1-248(p)	1979	seismic lines	no
1-343(p)	1980	seismic lines	yes
1-344(p)	1980	seismic lines	no
1-432(p)			no

TABLE 7-8
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE SPRUCE MOUNTAIN ALTERNATIVE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
	1-1757		historic	1-343(p)
	1-1758	task	---	1-343(p)
	1-1759		historic	1-343(p)

TABLE 7-9

PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE STEPTOE VALLEY SOUTH ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-12(p)	1975	cattleguard	no
4-22(n)	1975	well	no
4-23(p)	1975	well	yes
4-28(n)	1975	powerline	no
4-42(p)	1976	well	yes
4-51(p)	1976	geothermal wells	no
4-90(p)	1976	pipeline	yes
4-148(n)	1977	fence	no
4-160(n)	1977	seismic lines	no
4-161(n)	1977	material pits	no
4-207(p)	1978	IPP powerlines	yes
4-209(p)	1978	geothermal wells	yes
4-210(p)	1978	material pits	no
4-214(n)	1978	gravel road	no
4-221(n)	1978	race course	no
4-251(p)	1978	pipeline	no
4-253(p)	1978	highways	no
4-265(p)	1978	BLM URA	no
4-281(p)	1978	seismic lines	no
4-287(p)	1979	MX geotechnical station	yes
4-320(n)	1979	geothermal wells	no
4-323(n)	1979	land sale	no
4-327(p)	1979	fenceline	yes
4-351(p)	1980	geothermal wells	yes
4-354(p)	1980	seismic lines	yes
4-358(p)	1980	seismic lines	yes
4-361(p)	1980	MX geotechnical station	yes
4-367(p)	1980	MX geotechnical station	no
4-387(p)	1980	geotechnical studies	yes
4-396(p)	1980	aquifer study	no
4-398(p)	1980	seismic lines	yes
4-407(p)	1980	seismic lines	no
4-415(n)	1981	well	no
4-419(p)	1981	seismic lines	no
4-420(n)	1980	highways material pit	no
4-431(n)	1981	MX aquifer study	no
4-436(p)	1981	seismic line	no
4-441(n)	1981	seismic line	no
4-460(n)	1981	power line	no
4-472(p)	1981	MX aquifer study	yes
4-475(n)	1981	material pit	no
4-476(p)	1981	aggregate pit	no
4-477(p)	1981	seismic lines	no
4-478(p)	1981	WPPP Class II survey	yes
4-488(p)	1981	powerline	no

TABLE 7-9, Continued
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED
IN AND ADJACENT TO THE STEPTOE VALLEY SOUTH ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-496(n)	1981	highway material pit	no
4-500(p)	1981	MX Class II survey	yes
4-510(p)	1982	seismic lines	no
4-511(p)	1982	seismic lines	no
4-546(p)	1982	gravity survey	no
4-548(p)	1982	powerline	no

TABLE 7-10
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE STEPTOE VALLEY SOUTH ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26WP659	4-113	task	---	4-23(p)
26WP660	4-114	task	---	4-23(p)
26WP686	4-134	task	---	4-42(p)
26WP784	4-278	task	---	4-90(p)
26WP785	4-279	task	---	4-90(p)
26WP786	4-280	task	---	4-90(p)
26WP869	4-583	field	---	4-207(p)
26WP870	4-584	field	Archaic	4-207(p)
---	4-585	field	Fremont/Numic	4-209(p)
---	4-818	task	---	4-327(p)
26WP970	4-917	task	---	4-351(p)
---	4-924	homestead	Historic	4-354(p)
---	4-925	task	---	4-354(p)
---	4-926	task	---	4-354(p)
---	4-934	task	---	4-358(p)
---	4-937	task	---	4-358(p)
---	4-938	task	---	4-358(p)
---	4-939	task	---	4-358(p)
---	4-940	task	---	4-358(p)
---	4-982	task	---	4-361(p)
---	4-983	task	Archaic	4-361(p)
---	4-984	task	---	4-361(p)
26LN677	4-1202	quarry	---	4-287(p)
26LN678	4-1203	task	---	4-287(p)
26LN692	4-1207	field	---	4-287(p)
---	4-1213	task	---	4-287(p)
---	4-1221	task	Archaic	4-387(p)
---	4-1245	task	---	4-398(p)
---	4-1568	glass scatter	Historic	4-472(p)
---	4-1569	task	---	4-472(p)
26WP1234	4-1934	field	---	4-281(p)
26WP1235	4-1935	field	---	4-478(p)
26WP1238	4-1938	task	---	4-478(p)
26LN1925	4-2149	task	Numic	4-500(p)
26LN1936	4-2160	task	Archaic	4-500(p)
26LN1937	4-2161	task	---	4-500(p)
26LN1938	4-2162	task	Archaic	4-500(p)
26LN1939	4-2163	task	---	4-500(p)
26LN1940	4-2164	task	---	4-500(p)
26LN1943	4-2167	task	---	4-500(p)
26LN1944	4-2168	task	---	4-500(p)
26LN1945	4-2169	field	Archaic	4-500(p)
26LN1947	4-2171	field	Numic	4-500(p)
26LN1948	4-2172	task	---	4-500(p)
26LN2108	4-2178	task	---	4-500(p)

TABLE 7-10, Continued
CULTURAL RESOURCES PREVIOUSLY RECORDED
IN THE STEPTOE VALLEY SOUTH ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26LN1840	4-2246	field	Archaic/Numic	4-500(p)
26LN1841	4-2247	task	---	4-500(p)
	4-3104			4-209(p)
	4-3119			4-209(p)
26WP870				4-500(p)
26WP1233	4-1933	task	---	4-478(p)
26WP1234	4-1934	base	---	4-478(p)
26WP1235	4-1935	field	---	4-478(p)
26WP1237	4-1937	task	---	4-478(p)
26WP1238	4-1938	task	---	4-478(p)
26LN1600				4-207(p)
26LN1601				4-207(p)
26LN1677	4-586	field	---	4-207(p)

TABLE 7-11
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE STEPTOE VALLEY NORTH ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
1-118(p)	1977	seismic lines	no
1-248(p)	1979	seismic lines	yes
1-251(p)	1979	seismic lines	yes
1-252(p)	1980	seismic lines	yes
1-436(p)	----	seismic lines	no
1-454(p)	1981	seismic lines	yes
1-491(p)			yes
1-495(p)	1980	seismic lines	yes
1-497(p)	1982	seismic lines	yes
1-519(p)	1982	seismic lines	yes
1-577(p)	1982	highway material pits	yes
4-265(p)	1978	BLM URA	yes
4-478(p)	1981	WPPP Class II survey	no

TABLE 7-12
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE STEPTOE VALLEY NORTH ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26EK1981	1-1312	---	---	1-251(p)
26EK1986	1-1317	---	---	1-251(p)
26EK1959	1-1364	field	---	1-248(p)
26EK1964	1-1369			1-252(p)
26EK1965	1-1370			1-252(p)
26EK1966	1-1371			1-252(p)
26EK1972	1-1378			
26EK2046	1-1394	task	---	1-252(p)
26EK2048	1-1395	task	---	1-252(p)
	1-2095	camp area	historic	1-454(p)
	1-2239			1-491(p)
	1-2250	cemetery	historic	1-491(p)
	1-2251	field	Archaic/Fremont	1-495(p)
	1-2252	base	Numic	1-495(p)
	1-2259	camp	historic	1-497(p)
	1-2358	task	---	1-519(p)
	1-2359	task	---	1-519(p)
	1-2516	task	---	1-577(p)
26EK1836	1-148	field	---	1-118(p)
26EK1835	1-149	field	Numic	1-118(p)
546 ?				4-265(p)

TABLE 7-13
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE SCHELL ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-190(n)	1977	material pit	no
4-419(p)	1981	seismic lines	no
4-478(p)	1981	WPPP Class II survey	yes

TABLE 7-14
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE SCHELL ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26WP1203	4-1903	base	archaic/numic	478(p)

TABLE 7-15
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE ANTELOPE ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
1-117(n)	1978	fenceline	no
1-251(p)	1979	seismic lines	yes
1-338(p)	1980	seismic lines	yes
1-436(p)	----	seismic lines	no
1-437(p)	1981	seismic lines	yes
1-519(p)	1982	seismic lines	no
4-329(n)	1979	seismic lines	no

TABLE 7-16
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE ANTELOPE ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26EK1980	1-1311	task	---	1-251(p)
	1-1646	field	---	1-338(p)
	1-1647	field	---	1-338(p)
	1-2096	task	---	1-437(p)
	1-2097	task	---	1-437(p)
	1-2098	task	---	1-437(p)

TABLE 7-17
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE SPRING VALLEY SOUTH ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-30(n)	1975	well	no
4-65(p)	1976	horse trap	yes
4-207(p)	1978	IPP powerline	no
4-212(n)	1978	material pit	no
4-269(p)	1978	seismic lines	yes
4-275(n)	1978	land lease	no
4-283(p)	1978	seismic lines	no
4-325(p)	1979	seismic lines	yes
4-338(p)	1979	seismic lines	no
4-348(p)	1980	seismic lines	yes
4-361(p)	1980	geotechnical sta.	no
4-366(p)	1980	seismic lines	yes
4-367(p)	1980	MX drill sites	no
4-381(p)	1980	seismic lines	no
4-401(n)	1980	gravel pit	no
4-427(p)	1981	seismic lines	yes
4-431(n)	1981	aquifer study	no
4-454(p)	1981	pipeline	no
4-470(p)	1981	BLM sale	no
4-476(p)	1981	aggregate study	yes
4-500(p)	1980	MX Class II survey	yes
4-510(p)	1982	seismic lines	yes
4-518(p)	1982	highway material pit	yes
4-524(n)	1982	WPPP test wells	no
4-558(p)	1982	seismic lines	yes

TABLE 7-18

CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE SPRING VALLEY SOUTH ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26WP807	4-222	task	-	4-65(p)
	4-693	task	-	4-269(p)
	4-1046	task	-	4-348(p)
	4-1058	field	Numic	4-325(p)
26LN826	4-1064	task	-	4-366(p)
26LN827	4-1065	task	-	4-366(p)
26LN828	4-1066	task	-	4-366(p)
26LN868	4-1085	task	-	4-366(p)
26LN869	4-1086	task	-	4-366(p)
	4-1360	task	-	4-427(p)
	4-1361	task	-	4-427(p)
	4-1420	task	-	4-454(p)
26LN826	4-1435	task	-	4-366(p)
	4-1440	task	-	4-366(p)
26WP1295	4-1586	task	Archaic	4-476(p)
26Wp1296	4-1587	task	Archaic	4-476(p)
	4-1625	task	-	4-427(p)
	4-1820	task	-	4-518(p)
	4-1824	task	-	4-427(p)
	4-1818	task	Archaic	4-518(p)
	4-1819	task	-	4-518(p)
	4-1822	field	-	4-518(p)
	4-1823	task	-	4-518(p)
	4-1988	task	Pre-Archaic/Historic	4-510(p)
	4-1991	cabin	Historic	4-510(p)
26LN1977	4-2041	task	-	4-500(p)
26LN1978	4-2042	task	-	4-500(p)
26LN1989	4-2081	field	Archaic	4-500(p)
26LN1990	4-2082	task	-	4-500(p)
26LN1991	4-2083	field	Archiac	4-500(p)
26LN1993	4-2085	task	-	4-500(p)
26LN1994	4-2086	task	-	4-500(p)
26LN1995	4-2087	field	Archaic/Numic	4-500(p)
26LN1996	4-2088	task	Numic	4-500(p)
26LN1997	4-2089	field	Archaic/Numic	4-500(p)
26LN1998	4-2090	task	-	4-500(p)
26LN1999	4-2091	task	Numic	4-500(p)
26LN2000	4-2092	field	-	4-500(p)
	4-2138	task	-	4-500(p)
	4-2193	task	-	
	4-2594	task	-	4-558(p)

TABLE 7-19

PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE LAKE VALLEY ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-152(p)	1977	pipeline	yes
4-348(p)	1980	seismic lines	yes
4-366(p)	1980	seismic lines	yes
4-381(p)	1980	seismic lines	yes
4-427(p)	1981	seismic lines	yes
4-431(n)	1981	MX aquifer study	no
4-454(p)	1981	pipeline	no
4-456(p)	1981	telephone line	no
4-476(p)	1981	aggregate site	no
4-500(p)	1981	MX Class II survey	no
4-510(p)	1982	seismic lines	no
4-558(p)	1982	seismic lines	yes

TABLE 7-20

CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE LAKE VALLEY ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26LN1660	4-337	task	---	152(p)
26LN1661	4-338	task	---	152(p)
26LN1662	4-339	task	---	152(p)
26LN1761	4-1039	task	---	348(p)
26LN1763	4-1041	task	---	348(p)
26LN842	4-1076	task	---	366(p)
26LN843	4-1077	task	---	366(p)
26LN844	4-1078	task	---	366(p)
26LN845	4-1079	task	---	366(p)
26LN846	4-1080	task	---	366(p)
26LN847	4-1081	task	---	366(p)
26LN848	4-1082	task	---	366(p)
26LN849	4-1083	task	---	366(p)
26LN850	4-1084	task	Fremont/Numic	366(p)
---	4-1351	task	---	427(p)
---	4-1352	task	---	427(p)
---	4-1353	task	---	427(p)
---	4-1355	field	---	427(p)
---	4-1626	task	---	381(p)
---	4-2590	task	---	558(p)
	4-2952			558(p)

TABLE 7-21
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE PATTERSON ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
4-360(p)	1980	seismic lines	yes
4-366(p)	1980	seismic lines	yes
4-431(p)	1981	MX aquifer study	no

TABLE 7-22
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE PATTERSON ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
---	4-943	task	---	4-360(p)
---	4-951	task	---	4-360(p)
---	4-954	task	---	4-360(p)
---	4-965	task	---	4-360(p)
	4-966	field	Archaic	4-360(p)
26LN836	4-1074	task	---	4-366(p)
26LN837	4-1075	task	---	4-366(p)
---	4-1441	task	---	4-366(p)
---	4-1442	task	---	4-366(p)
---	4-1443	task	---	4-366(p)
---	4-1145	task	---	4-366(p)
---	4-1446	task	---	4-366(p)

TABLE 7-23
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE SPRING VALLEY NORTH ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
1-251(p)	1979	seismic lines	yes
1-392(p)	1981	fenceline	yes
4-157(p)	1977	seismic lines	yes
4-240(p)	1978	seismic lines	no
4-274(p)	1979	drill pad	yes
4-281(p)	1978	seismic lines	yes
4-329(n)	1979	seismic lines	no
4-338(p)	1979	seismic lines	yes
4-361(p)	1980	geotechnical sta.	yes
4-476(p)	1981	aggregate study	no
4-486(p)	1981	seismic lines	no
4-488(p)	1981	seismic lines	no
4-524(n)	1982	WPPP test wells	no
4-557(p)	1982	highway betterment	no

TABLE 7-24
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE SPRING VALLEY NORTH ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26EK1976	1-1307	task	---	1-251(p)
26EK1977	1-1308	task	---	1-251(p)
26EK1978	1-1309	task	---	1-251(p)
	1-1894	task	---	1-392(p)
	1-1895	quarry	---	1-392(p)
	4-159	battlefield	historic	
	4-180	house	historic	
26WP876	4-371	task	---	4-157(p)
	4-695	base	Numic	4-274(p)
	4-828	task	---	4-338(p)
	4-829	task	Fremont/Numic	4-338(p)
	4-830	task	---	4-338(p)
26WP905	4-866	field	Numic	4-281(p)
26WP906	4-867	task	---	4-281(p)
	4-978	task	---	4-361(P)
		station	historic	

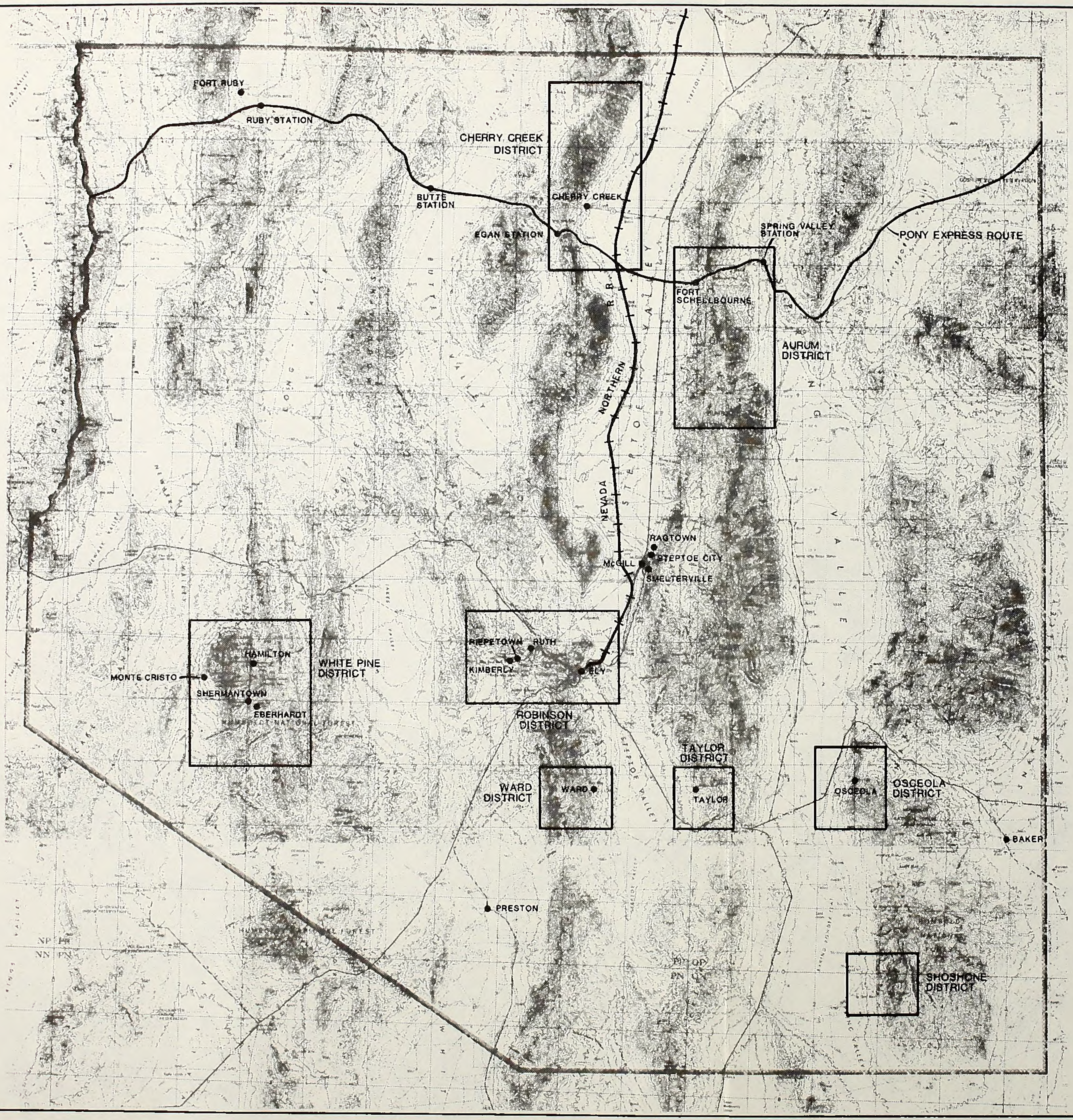
TABLE 7-25
PREVIOUS CULTURAL RESOURCE PROJECTS CONDUCTED IN AND ADJACENT TO THE CURRIE ALTERNATE

BLM REPORT NUMBER	REPORT DATE	TYPE OF SURVEY	SITES FOUND
1-118(p)	1977	seismic lines	yes
1-248(p)	1979	seismic lines	yes
1-251(p)	1979	seismic lines	yes
1-392(p)	1981	fenceline	yes

TABLE 7-26
CULTURAL RESOURCES PREVIOUSLY RECORDED IN THE CURRIE ALTERNATE

NSM SITE NUMBER	BLM SITE NUMBER	SITE TYPE	CULTURAL AFFILIATION	BLM REPORT NUMBER
26EK1834	1-150	task	-	1-118(p)
26EK1973	1-1304	horse trap	historic	1-251(p)
26EK1984	1-1315	task	-	1-215(p)
26EK1987	1-1318	field	-	1-215(p)
26EK1946	1-1352	field	-	1-248(p)
26EK1966	1-1371	task	-	1-248(p)
	1-1895	quarry	-	1-392(p)
	1-1896	task	-	1-392(p)

FIGURES

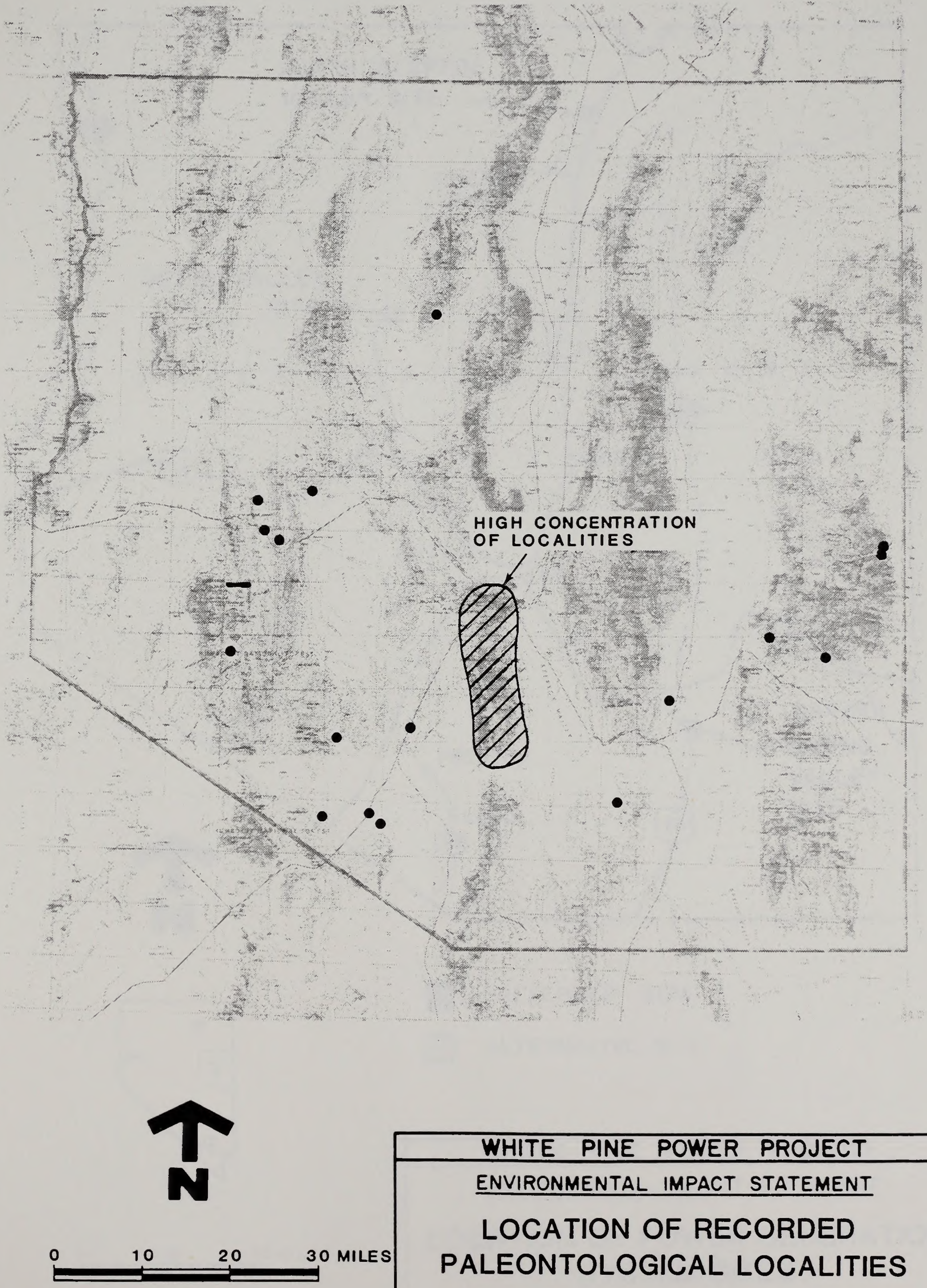


WHITE PINE POWER PROJECT

ENVIRONMENTAL IMPACT STATEMENT

LOCATION OF SELECTED HISTORIC SITES AND MINING DISTRICTS

FIGURE 3-1

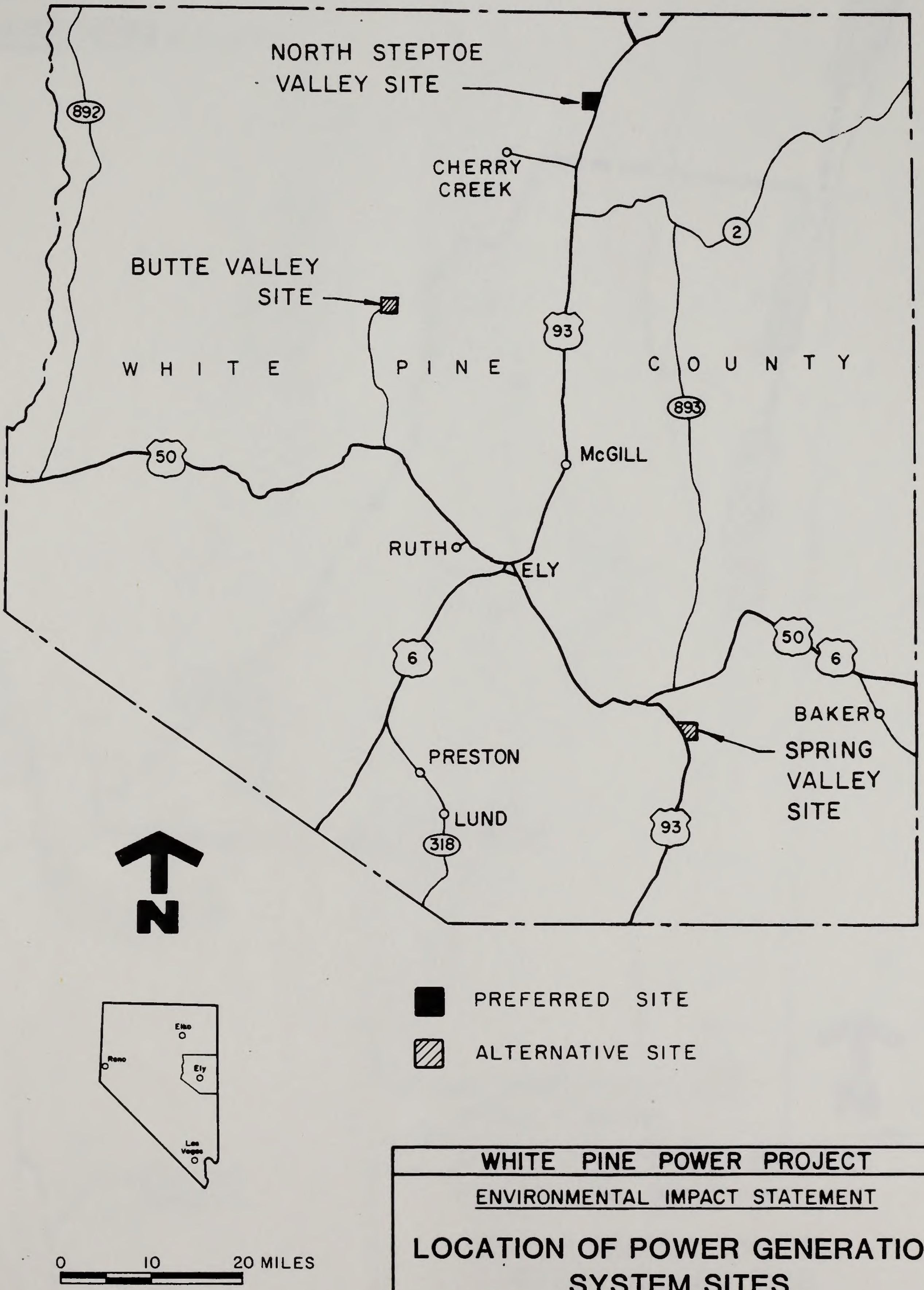


WHITE PINE POWER PROJECT

ENVIRONMENTAL IMPACT STATEMENT

LOCATION OF RECORDED PALEONTOLOGICAL LOCALITIES

FIGURE 3-2

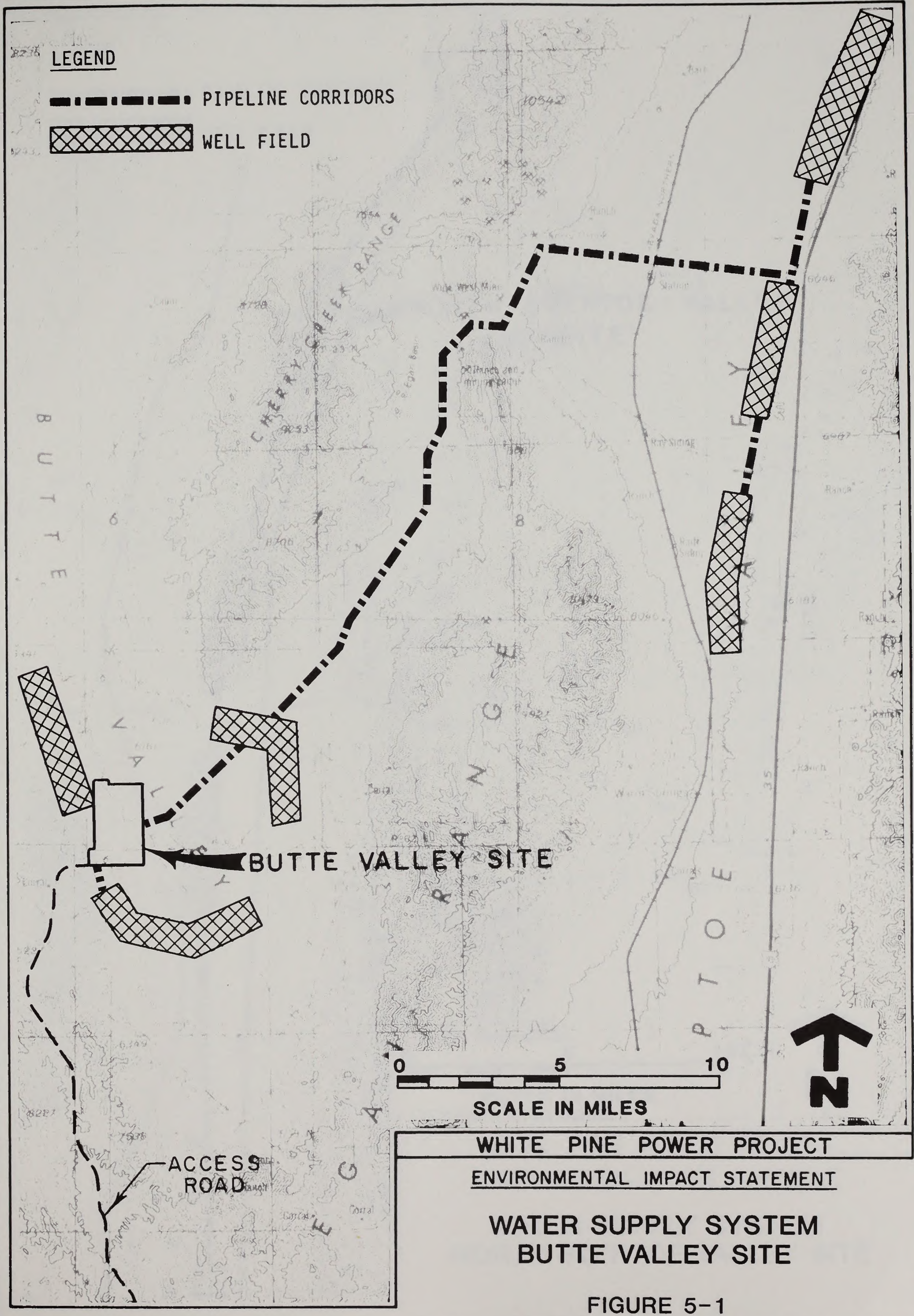


WHITE PINE POWER PROJECT

ENVIRONMENTAL IMPACT STATEMENT

LOCATION OF POWER GENERATION SYSTEM SITES

FIGURE 4-1

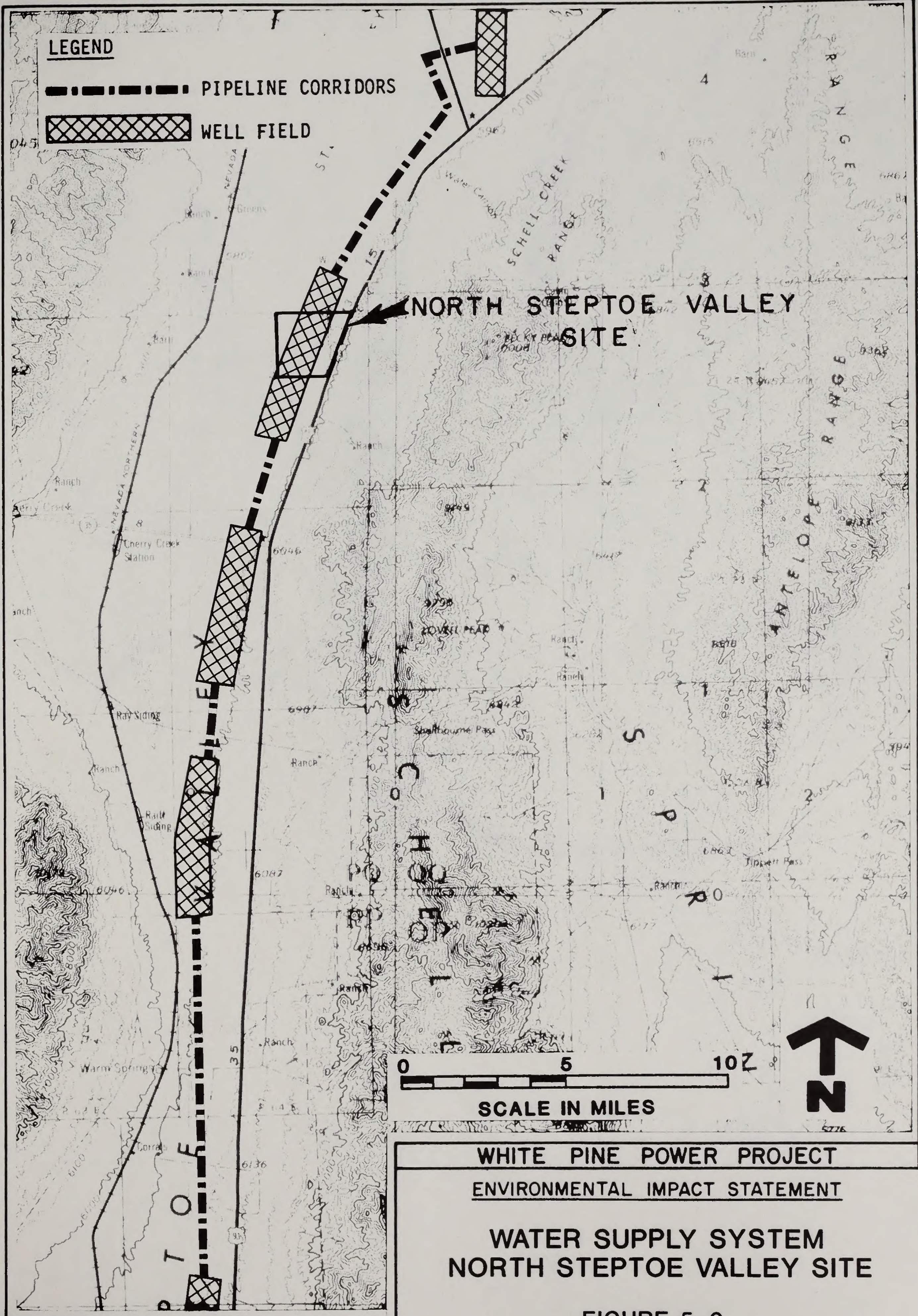


WHITE PINE POWER PROJECT

ENVIRONMENTAL IMPACT STATEMENT

WATER SUPPLY SYSTEM
BUTTE VALLEY SITE

FIGURE 5-1

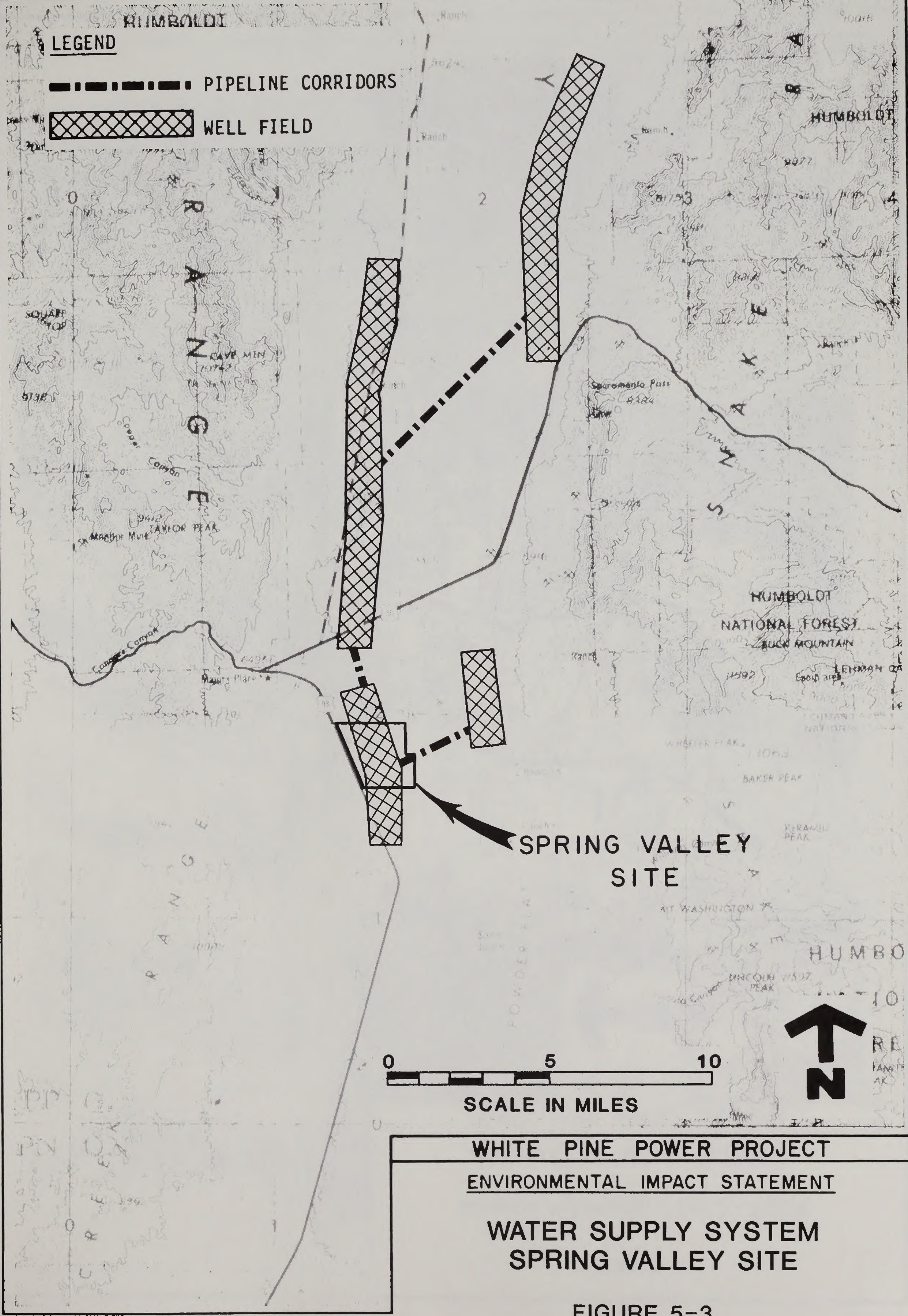


WHITE PINE POWER PROJECT

ENVIRONMENTAL IMPACT STATEMENT

WATER SUPPLY SYSTEM
NORTH STEPTOE VALLEY SITE

FIGURE 5-2

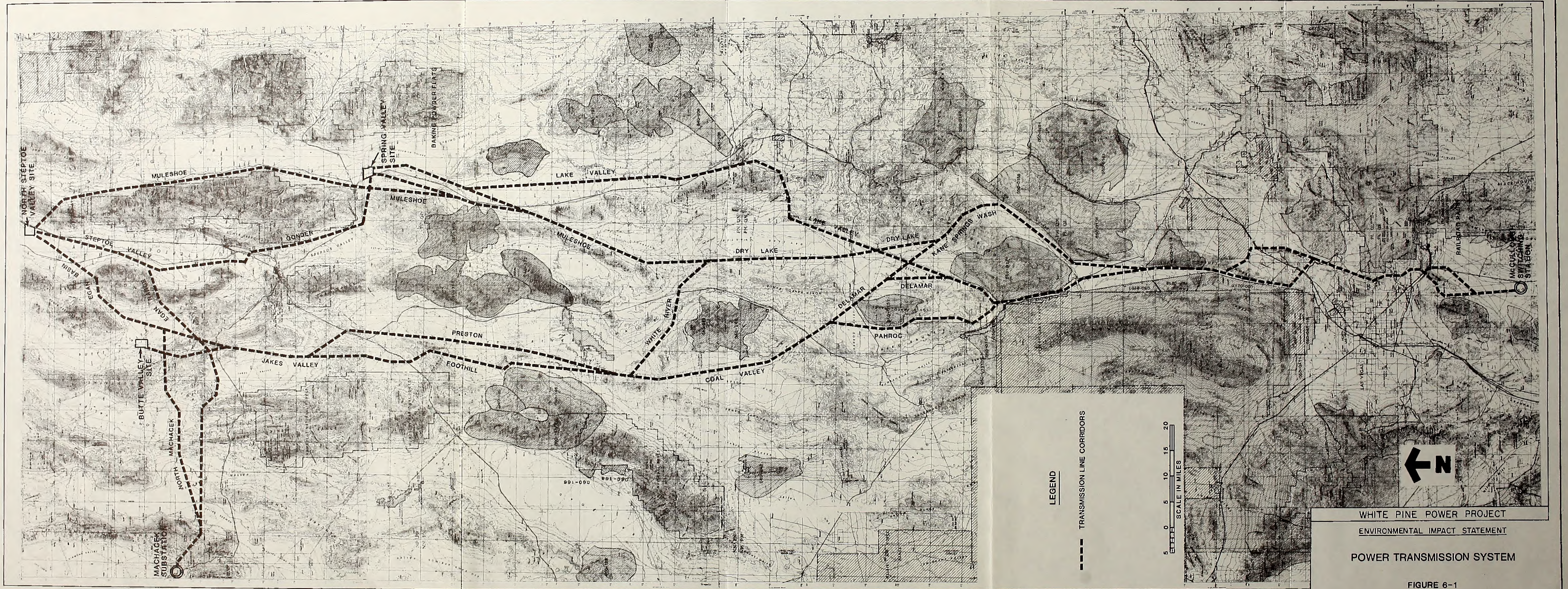


WHITE PINE POWER PROJECT

ENVIRONMENTAL IMPACT STATEMENT

WATER SUPPLY SYSTEM
SPRING VALLEY SITE

FIGURE 5-3

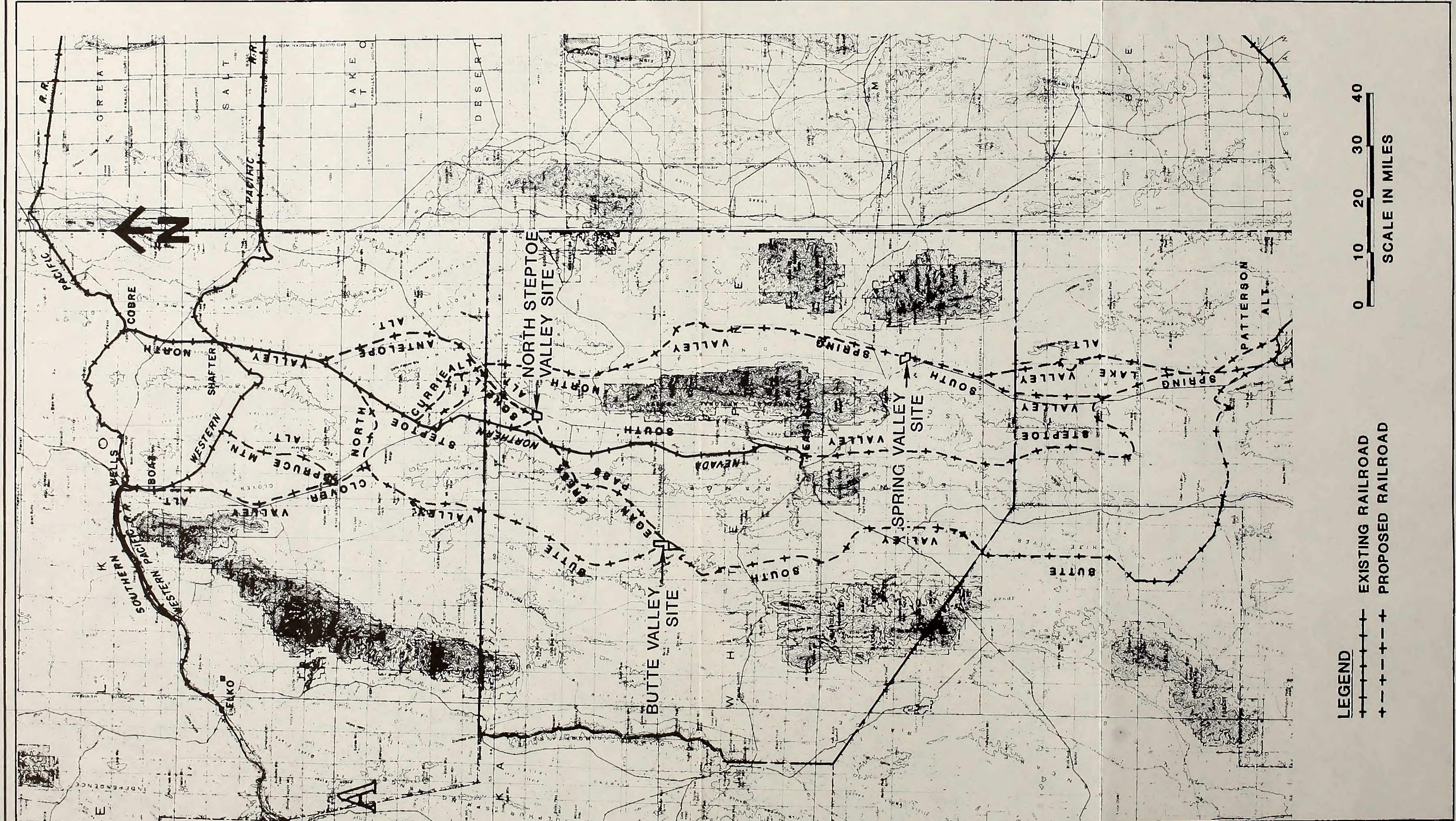


WHITE PINE POWER PROJECT

ENVIRONMENTAL IMPACT STATEMENT

POWER TRANSMISSION SYSTEM

FIGURE 6-1



WHITE PINE POWER PROJECT

ENVIRONMENTAL IMPACT STATEMENT

COAL TRANSPORTATION SYSTEM

FIGURE 7-1

APPENDIX

INTERMOUNTAIN
RESEARCH

Archaeology
History
Ethnohistory
Ethnography
Paleontology
Quaternary Geology

100 MAIN STREET · P. O. BOX 32 · SILVER CITY, NEVADA 89428 · (702) 847-0411

April 11, 1983

Western Shoshone Sacred Lands Association
P.O. Box 185
Battle Mountain, Nevada 89820

Attention: Mr. Glenn V. Holley, Sr.

Dear Mr. Holley:

On behalf of the Nevada State Office of the Bureau of Land Management (BLM), we are conducting a Native American Consultation Program. This program is in response to the requirements specified in the National Environmental Policy Act (NEPA) regarding preparation of major environmental documents. In this regard, the BLM is interested in identifying concerns that Native Americans may have about the proposed White Pine Power Project (WPPP).

WPPP is a proposed 1,500 megawatt (MW) coal-fueled, steam-electric generating facility to be located in White Pine County, Nevada. The project will be jointly owned by White Pine County and two Nevada utilities: Nevada Power Company and Sierra Pacific Power Company. The Los Angeles Department of Water and Power (LADWP) is serving as the Development Manager for the project and is responsible for selecting a project site and suitable locations for the power transmission, railroad, and water supply systems (referred to as lineal facilities).

Preliminary studies completed in 1979 favorably concluded that there were a number of potential 1,500 MW sites in the County. In 1980, LADWP retained Dames & Moore as the Environmental Consultant to conduct detailed environmental studies in support of the siting effort. Intermountain Research, cultural resources consultant, is assisting Dames & Moore by determining the potential impact WPPP will have on cultural resources in the area.

During the past three years extensive environmental investigations have been in progress to locate environmentally suitable locations for the power plant and lineal facilities.

CULTURAL RESOURCES CONSULTANTS

The potential for environmental impacts and the presence of cultural resources were major criteria used in the selection process. The assessment of cultural resources impacts included:

1. Properties listed in the National Register of Historic Places.

2. Extensive literature search and agency contacts.

3. Archaeological field studies.

The results of the cultural resource assessment, combined with other environmental factors, resulted in the selection of three alternative sites located in North Steptoe Valley, Butte Valley, and Spring Valley. In addition, alternative corridor and route locations for the lineal facilities have been selected.

At this stage in the NEPA process, we are preparing a Draft Environmental Impact Statement (DEIS) for the BLM which will recommend a preferred site from the three sites mentioned above. It is essential to identify concerns that Native Americans may have about WPPP and its potential impact on cultural resources important to them. It is also necessary to determine in what ways lands affected by the project may be held in special regard by Native Americans today.

To date, we have contacted the following groups:

Inter-Tribal Council of Nevada
Duckwater Shoshone Tribe
Ely Indian Colony
Confederated Tribes of the Goshute Reservation
Wells Indian Colony (Te-Moak)
Odgers Range (Te-Moak, South Fork)
Moapa Band of Paiutes

If you can suggest other groups or individuals who may have direct concerns, please send us their mailing addresses so that we can contact them as soon as possible.

Enclosed are a brochure describing the project and two project maps for your review. Map C-208 shows the locations of the three alternative plant site locations and the proposed railroad routes. The power plant site will cover approximately 2,500 acres when constructed. The width of the railroad right-of-way will be approximately 150 feet. Map C-348 shows the same alternative sites with the proposed power transmission routes. Planned right-of-way width for the transmission lines is 330 feet.

In order to meet the DEIS production schedule, we would appreciate your response by June 15, 1983. If you have any questions, please call us at (702) 847-0411. Your time and consideration will be well spent. It is important for us all to consider how our endeavors will affect our lives and our land.

Very truly yours,

Cashion Callaway
Administrative Coordinator

CC:DJM:ec

Enclosures: Project Maps (2)
Project Brochure
Response Envelope

INTERMOUNTAIN
RESEARCH

Archaeology
History
Ethnohistory
Ethnography
Paleontology
Quaternary Geology

100 MAIN STREET · P. O. BOX 32 · SILVER CITY, NEVADA 89428 · (702) 847-0411

April 11, 1983

Inter-Tribal Council of Nevada
P.O. Box 7440
Reno, Nevada 89510

Attention: Mr. Davis Gonzales, Chairman

Dear Mr. Gonzales:

On behalf of the Nevada State Office of the Bureau of Land Management (BLM), we are conducting a Native American Consultation Program. This program is in response to the requirements specified in the National Environmental Policy Act (NEPA) regarding preparation of major environmental documents. In this regard, the BLM is interested in identifying concerns that Native Americans may have about the proposed White Pine Power Project (WPPP).

WPPP is a proposed 1,500 megawatt (MW) coal-fueled, steam-electric generating facility to be located in White Pine County, Nevada. The project will be jointly owned by White Pine County and two Nevada utilities: Nevada Power Company and Sierra Pacific Power Company. The Los Angeles Department of Water and Power (LADWP) is serving as the Development Manager for the project and is responsible for selecting a project site and suitable locations for the power transmission, railroad, and water supply systems (referred to as lineal facilities).

Preliminary studies completed in 1979 favorably concluded that there were a number of potential 1,500 MW sites in the County. In 1980, LADWP retained Dames & Moore as the Environmental Consultant to conduct detailed environmental studies in support of the siting effort. Intermountain Research, cultural resources consultant, is assisting Dames & Moore by determining the potential impact WPPP will have on cultural resources in the area.

During the past three years extensive environmental investigations have been in progress to locate environmentally suitable locations for the power plant and lineal facilities.

The potential for environmental impacts and the presence of cultural resources were major criteria used in the selection process. The assessment of cultural resources impacts included:

1. Properties listed in the National Register of Historic Places.

2. Extensive literature search and agency contacts.

3. Archaeological field studies.

The results of the cultural resource assessment, combined with other environmental factors, resulted in the selection of three alternative sites located in North Steptoe Valley, Butte Valley, and Spring Valley. In addition, alternative corridor and route locations for the lineal facilities have been selected.

At this stage in the NEPA process, we are preparing a Draft Environmental Impact Statement (DEIS) for the BLM which will recommend a preferred site from the three sites mentioned above. It is essential to identify concerns that Native Americans may have about WPPP and its potential impact on cultural resources important to them. It is also necessary to determine in what ways lands affected by the project may be held in special regard by Native Americans today.

To date, we have contacted the following groups:

Western Shoshone Lands Association
Duckwater Shoshone Tribe
Ely Indian Colony
Confederated Tribes of the Goshute Reservation
Wells Indian Colony (Te-Moak)
Odgers Range (Te-Moak, South Fork)
Moapa Band of Paiutes

If you can suggest other groups or individuals who may have direct concerns, please send us their mailing addresses so that we can contact them as soon as possible.

Enclosed are a brochure describing the project and two project maps for your review. Map C-208 shows the locations of the three alternative plant site locations and the proposed railroad routes. The power plant site will cover approximately 2,500 acres when constructed. The width of the railroad right-of-way will be approximately 150 feet. Map C-348 shows the same alternative sites with the proposed power transmission routes. Planned right-of-way width for the transmission lines is 330 feet.

In order to meet the DEIS production schedule, we would appreciate your response by June 15, 1983. If you have any questions, please call us at (702) 847-0411. Your time and consideration will be well spent. It is important for us all to consider how our endeavors will affect our lives and our land.

Very truly yours,

Cashion Callaway
Administrative Coordinator

CC:DJM:ec

Enclosures: Project Maps (2)
Project Brochure
Response Envelope

INTERMOUNTAIN
RESEARCH

Archeeology
History
Ethnohistory
Ethnography
Paleontology
Quaternary Geology

100 MAIN STREET · P. O. BOX 32 · SILVER CITY, NEVADA 89428 · (702) 847-0411

April 11, 1983

Duckwater Shoshone Tribe of
the Duckwater Reservation
P.O. Box 68
Duckwater, Nevada 89314

Attention: Mr. Jerry Millet, Chairman

Dear Mr. Millet:

On behalf of the Nevada State Office of the Bureau of Land Management (BLM), we are conducting a Native American Consultation Program. This program is in response to the requirements specified in the National Environmental Policy Act (NEPA) regarding preparation of major environmental documents. In this regard, the BLM is interested in identifying concerns that Native Americans may have about the proposed White Pine Power Project (WPPP).

WPPP is a proposed 1,500 megawatt (MW) coal-fueled, steam-electric generating facility to be located in White Pine County, Nevada. The project will be jointly owned by White Pine County and two Nevada utilities: Nevada Power Company and Sierra Pacific Power Company. The Los Angeles Department of Water and Power (LADWP) is serving as the Development Manager for the project and is responsible for selecting a project site and suitable locations for the power transmission, railroad, and water supply systems (referred to as lineal facilities).

Preliminary studies completed in 1979 favorably concluded that there were a number of potential 1,500 MW sites in the County. In 1980, LADWP retained Dames & Moore as the Environmental Consultant to conduct detailed environmental studies in support of the siting effort. Intermountain Research, cultural resources consultant, is assisting Dames & Moore by determining the potential impact WPPP will have on cultural resources in the area.

During the past three years extensive environmental investigations have been in progress to locate environmentally suitable locations for the power plant and lineal facilities.

The potential for environmental impacts and the presence of cultural resources were major criteria used in the selection process. The assessment of cultural resources impacts included:

1. Properties listed in the National Register of Historic Places.

2. Extensive literature search and agency contacts.

3. Archaeological field studies.

The results of the cultural resource assessment, combined with other environmental factors, resulted in the selection of three alternative sites located in North Steptoe Valley, Butte Valley, and Spring Valley. In addition, alternative corridor and route locations for the lineal facilities have been selected.

At this stage in the NEPA process, we are preparing a Draft Environmental Impact Statement (DEIS) for the BLM which will recommend a preferred site from the three sites mentioned above. It is essential to identify concerns that Native Americans may have about WPPP and its potential impact on cultural resources important to them. It is also necessary to determine in what ways lands affected by the project may be held in special regard by Native Americans today.

The region in which the project will be located was once occupied by Indian people, traditionally the Shoshone to the north and the Southern Paiute to the south, although no Duckwater reservation lands are in the immediate vicinity of any of the proposed project facilities.

Enclosed are a brochure describing the project and two project maps for your review. Map C-208 shows the locations of the three alternative plant site locations and the proposed railroad routes. The power plant site will cover approximately 2,500 acres when constructed. The width of the railroad right-of-way will be approximately 150 feet. Map C-348 shows the same alternative sites with the proposed power transmission routes. Planned right-of-way width for the transmission lines is 330 feet.

If the Duckwater Reservation people have any concerns for particular cultural resources or for particular kinds of land use that may be affected by the project, we encourage you to submit written comments describing your concerns for presentation in the DEIS. In order to meet the DEIS production schedule, we would appreciate your response by June 15, 1983. If you have any questions, please call us at (702) 847-0411. If you know of

other groups or individuals who may have direct concerns, please send us their mailing addresses so that we can contact them.

Your time and consideration will be well spent. It is important for us all to consider how our endeavors will affect our lives and our land.

Very truly yours,

Cashion Callaway
Administrative Coordinator

CC:DJM:ec

Enclosures: Project Maps (2)
Project Brochure
Response Envelope

[illegible]

Duckwater Shoshone Tribe
Tribal Government Office
Duckwater, Nevada 89314
Telephone (702) 863-0227

April 27, 2983

Cashion Callaway, Project Manager
Intermountain Research
P.O. Box 32
Silver City, Nevada 89428

Dear Sir,

Pursuant to the letter received by this office dated April 11, 1983.

The purpose of this letter is to inform you that the Western Shoshone and the United States are presently in the Courts over the question of who owns the land. You may wish to consider this information in your development plans.

Sincerley,

Jerry Millett

Jerry Millett, Chairman
Duckwater Shoshone Tribe

JM/ad

INTERMOUNTAIN
RESEARCH

Archaeology
History
Ethnohistory
Ethnography
Paleontology
Quaternary Geology

100 MAIN STREET - P. O. BOX 32 - SILVER CITY, NEVADA 89428 - (702) 847-0411

April 11, 1983

Ely Indian Colony
#16 Shoshone Circle
Ely, Nevada 89301

Attention: Mr. Welsey Allison, Chairman

Dear Mr. Allison:

On behalf of the Nevada State Office of the Bureau of Land Management (BLM), we are conducting a Native American Consultation Program. This program is in response to the requirements specified in the National Environmental Policy Act (NEPA) regarding preparation of major environmental documents. In this regard, the BLM is interested in identifying concerns that Native Americans may have about the proposed White Pine Power Project (WPPP).

WPPP is a proposed 1,500 megawatt (MW) coal-fueled, steam-electric generating facility to be located in White Pine County, Nevada. The project will be jointly owned by White Pine County and two Nevada utilities: Nevada Power Company and Sierra Pacific Power Company. The Los Angeles Department of Water and Power (LADWP) is serving as the Development Manager for the project and is responsible for selecting a project site and suitable locations for the power transmission, railroad, and water supply systems (referred to as lineal facilities).

Preliminary studies completed in 1979 favorably concluded that there were a number of potential 1,500 MW sites in the County. In 1980, LADWP retained Dames & Moore as the Environmental Consultant to conduct detailed environmental studies in support of the siting effort. Intermountain Research, cultural resources consultant, is assisting Dames & Moore by determining the potential impact WPPP will have on cultural resources in the area.

During the past three years extensive environmental investigations have been in progress to locate environmentally suitable locations for the power plant and lineal facilities.

CULTURAL RESOURCES CONSULTANTS

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The region in which the project will be located was once occupied by Indian people, traditionally the Shoshone to the north and the Southern Paiute to the south, although no Ely Colony reservation lands are in the immediate vicinity of any of the proposed project facilities.

Enclosed are a brochure describing the project and two project maps for your review. Map C-208 shows the locations of the three alternative plant site locations and the proposed railroad routes. The power plant site will cover approximately 2,500 acres when constructed. The width of the railroad right-of-way will be approximately 150 feet. Map C-348 shows the same alternative sites with the proposed power transmission routes. Planned right-of-way width for the transmission lines is 330 feet.

If the Ely Colony people have any concerns for particular cultural resources or for particular kinds of land use that may be affected by the project, we encourage you to submit written comments describing your concerns for presentation in the DEIS. In order to meet the DEIS production schedule, we would appreciate your response by June 15, 1983. If you have any questions, please call us at (702) 847-0411. If you know of

other groups or individuals who may have direct concerns, please send us their mailing addresses so that we can contact them.

Your time and consideration will be well spent. It is important for us all to consider how our endeavors will affect our lives and our land.

Very truly yours,

Cashion Callaway
Administrative Coordinator

CC:DJM:ec

Enclosures: Project Maps (2)
Project Brochure
Response Envelope

rec'd -116/83

Ely Colony Council

16 SHOSHONE CIRCLE **702-289-3013** **ELY, NEVADA 89301**

May 11, 1983

Mr. Cashion Callaway
Administrative Coordinator
Intermountain Research
P.O. Box 32
Silver City, Nevada 89428

RE: Project Maps

Dear Mr. Callaway:

Thank you for your letter requesting our input into the WPPP DEIS.

To properly comment, the Council feels that each Council member should have a set of maps of proposed transmission and RR lines. Different Council members will be taking responsibility for analysis of separate sections of the proposed project, and an individual set of maps for each will be a great help.

To that end, we are requesting four (4) additional sets of project maps showing proposed transmission and RR lines.

We would appreciate also some discussion from you regarding proposed water supply systems for the three sites.

Thank you.

Sincerely,

Wesley Allison
Wesley Allison
Tribal Chairman

cc: Mike Bourn

Mike Bourn
WPPP Coordinator
457 5th Street
Ely, Nevada 89301

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100 MAIN STREET · P. O. BOX 32 · SILVER CITY, NEVADA 89428 · (702) 847-0411

May 18, 1983

Mr. Wesley Allison
Tribal Chairman
Ely Colony Council
16 Shoshone Circle
Ely, NV 89301

Re: White Pine Power Project

Dear Mr. Allison:

Enclosed please find the four additional map sets requested in your letter of May 11, 1983.

Regretfully, I cannot offer any useful discussion about the proposed water supply systems for the Alternate Sites since our area of expertise is confined to cultural resources. However, if you will direct your inquiry to Mr. Ron P. Merlo, Environmental Engineer, White Pine Power Project, 111 North Hope Street, Room 931, Los Angeles, California 90051 (Telephone 213-481-5372), he will assist you.

Your consideration of the project is appreciated, and we look forward to receipt of your comments.

Very truly yours,

Cashion Callaway
Administrative Coordinator

ec

Copy: Mr. Ron P. Merlo
Ms. Donna McClay

White Pine Power Project

A Nevada—California energy generation development in White Pine County

Development Manager:
Los Angeles Department of Water and Power
Room 931, Post Office Box 111, Los Angeles, California 90051

June 10, 1983

Mr. Wesley Allison
Tribal Chairman
Ely Colony Council
16 Shoshone Circle
Ely, Nevada 89301

Dear Mr. Allison:

Preferred Site and Routes

I enjoyed the opportunity to meet with you and other members of your Council on May 31, 1983. The enclosed maps for the preferred North Steptoe Valley Site, which you requested at the meeting, provide the locations of the two-mile-wide study corridors for the railroad (pink), transmission lines (yellow), and potential well field locations (blue). If you have any additional questions, please write or call me at (213) 481-5372.

Sincerely,

/s/ Ronald P. Merlo
RONALD P. MERLO
Environmental Engineer

RPM:in

Enclosures

cc: M. R. Bourn w/o enc.
D. J. McClay ✓ " "
C. Callaway ✓ " "

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100 MAIN STREET · P. O. BOX 32 · SILVER CITY, NEVADA 89428 · (702) 847-0411

April 11, 1983

Confederated Tribes of the
Goshute Reservation
General Delivery
Ibaph, Utah 84034

Attention: Mr. Dan Murphy, Chairman

Dear Mr. Murphy:

On behalf of the Nevada State Office of the Bureau of Land Management (BLM), we are conducting a Native American Consultation Program. This program is in response to the requirements specified in the National Environmental Policy Act (NEPA) regarding preparation of major environmental documents. In this regard, the BLM is interested in identifying concerns that Native Americans may have about the proposed White Pine Power Project (WPPP).

WPPP is a proposed 1,500 megawatt (MW) coal-fueled, steam-electric generating facility to be located in White Pine County, Nevada. The project will be jointly owned by White Pine County and two Nevada utilities: Nevada Power Company and Sierra Pacific Power Company. The Los Angeles Department of Water and Power (LADWP) is serving as the Development Manager for the project and is responsible for selecting a project site and suitable locations for the power transmission, railroad, and water supply systems (referred to as lineal facilities).

Preliminary studies completed in 1979 favorably concluded that there were a number of potential 1,500 MW sites in the County. In 1980, LADWP retained Dames & Moore as the Environmental Consultant to conduct detailed environmental studies in support of the siting effort. Intermountain Research, cultural resources consultant, is assisting Dames & Moore by determining the potential impact WPPP will have on cultural resources in the area.

During the past three years extensive environmental investigations have been in progress to locate environmentally suitable locations for the power plant and lineal facilities.

The potential for environmental impacts and the presence of cultural resources were major criteria used in the selection process. The assessment of cultural resources impacts included:

1. Properties listed in the National Register of Historic Places.

2. Extensive literature search and agency contacts.

3. Archaeological field studies.

The results of the cultural resource assessment, combined with other environmental factors, resulted in the selection of three alternative sites located in North Steptoe Valley, Butte Valley, and Spring Valley. In addition, alternative corridor and route locations for the lineal facilities have been selected.

At this stage in the NEPA process, we are preparing a Draft Environmental Impact Statement (DEIS) for the BLM which will recommend a preferred site from the three sites mentioned above. It is essential to identify concerns that Native Americans may have about WPPP and its potential impact on cultural resources important to them. It is also necessary to determine in what ways lands affected by the project may be held in special regard by Native Americans today.

The region in which the project will be located was once occupied by Indian people, traditionally the Shoshone to the north and the Southern Paiute to the south, although no Goshute reservation lands are in the immediate vicinity of any of the proposed project facilities.

Enclosed are a brochure describing the project and two project maps for your review. Map C-208 shows the locations of the three alternative plant site locations and the proposed railroad routes. The power plant site will cover approximately 2,500 acres when constructed. The width of the railroad right-of-way will be approximately 150 feet. Map C-348 shows the same alternative sites with the proposed power transmission routes. Planned right-of-way width for the transmission lines is 330 feet.

If the Goshute people have any concerns for particular cultural resources or for particular kinds of land use that may be affected by the project, we encourage you to submit written comments describing your concerns for presentation in the DEIS. In order to meet the DEIS production schedule, we would appreciate your response by June 15, 1983. If you have any questions, please call us at (702) 847-0411. If you know of

other groups or individuals who may have direct concerns, please send us their mailing addresses so that we can contact them.

Your time and consideration will be well spent. It is important for us all to consider how our endeavors will affect our lives and our land.

Very truly yours,

Cashion Callaway
Administrative Coordinator

CC:DJM:ec

Enclosures: Project Maps (2)
Project Brochure
Response Envelope

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100 MAIN STREET · P. O. BOX 32 · SILVER CITY, NEVADA 89428 · (702) 847-0411

April 11, 1983

Wells Indian Colony
(Te-Moak Bands of Western Shoshone)
P.O. Box 809
Wells, Nevada 89835

Attention: Ms. Velma Williams, Chairperson

Dear Ms. Williams:

On behalf of the Nevada State Office of the Bureau of Land Management (BLM), we are conducting a Native American Consultation Program. This program is in response to the requirements specified in the National Environmental Policy Act (NEPA) regarding preparation of major environmental documents. In this regard, the BLM is interested in identifying concerns that Native Americans may have about the proposed White Pine Power Project (WPPP).

WPPP is a proposed 1,500 megawatt (MW) coal-fueled, steam-electric generating facility to be located in White Pine County, Nevada. The project will be jointly owned by White Pine County and two Nevada utilities: Nevada Power Company and Sierra Pacific Power Company. The Los Angeles Department of Water and Power (LADWP) is serving as the Development Manager for the project and is responsible for selecting a project site and suitable locations for the power transmission, railroad, and water supply systems (referred to as lineal facilities).

Preliminary studies completed in 1979 favorably concluded that there were a number of potential 1,500 MW sites in the County. In 1980, LADWP retained Dames & Moore as the Environmental Consultant to conduct detailed environmental studies in support of the siting effort. Intermountain Research, cultural resources consultant, is assisting Dames & Moore by determining the potential impact WPPP will have on cultural resources in the area.

During the past three years extensive environmental investigations have been in progress to locate environmentally suitable locations for the power plant and lineal facilities.

CULTURAL RESOURCES CONSULTANTS

The potential for environmental impacts and the presence of cultural resources were major criteria used in the selection process. The assessment of cultural resources impacts included:

1. Properties listed in the National Register of Historic Places.

2. Extensive literature search and agency contacts.

3. Archaeological field studies.

The results of the cultural resource assessment, combined with other environmental factors, resulted in the selection of three alternative sites located in North Steptoe Valley, Butte Valley, and Spring Valley. In addition, alternative corridor and route locations for the lineal facilities have been selected.

At this stage in the NEPA process, we are preparing a Draft Environmental Impact Statement (DEIS) for the BLM which will recommend a preferred site from the three sites mentioned above. It is essential to identify concerns that Native Americans may have about WPPP and its potential impact on cultural resources important to them. It is also necessary to determine in what ways lands affected by the project may be held in special regard by Native Americans today.

The region in which the project will be located was once occupied by Indian people, traditionally the Shoshone to the north and the Southern Paiute to the south, although no Wells Colony lands are in the immediate vicinity of any of the proposed project facilities.

Enclosed are a brochure describing the project and two project maps for your review. Map C-208 shows the locations of the three alternative plant site locations and the proposed railroad routes. The power plant site will cover approximately 2,500 acres when constructed. The width of the railroad right-of-way will be approximately 150 feet. Map C-348 shows the same alternative sites with the proposed power transmission routes. Planned right-of-way width for the transmission lines is 330 feet.

If the Wells Colony people have any concerns for particular cultural resources or for particular kinds of land use that may be affected by the project, we encourage you to submit written comments describing your concerns for presentation in the DEIS. In order to meet the DEIS production schedule, we would appreciate your response by June 15, 1983. If you have any questions, please call us at (702) 847-0411. If you know of

other groups or individuals who may have direct concerns, please send us their mailing addresses so that we can contact them.

Your time and consideration will be well spent. It is important for us all to consider how our endeavors will affect our lives and our land.

Very truly yours,

Cashion Callaway
Administrative Coordinator

CC:DJM:ec

Enclosures: Project Maps (2)
Project Brochure
Response Envelope

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100 MAIN STREET · P. O. BOX 32 · SILVER CITY, NEVADA 89428 · (702) 847-0411

April 11, 1983

Moapa Band of Paiute Indians
P.O. Box 56
Moapa, Nevada 89025

Attention: Mr. Preston Tom, Chairman

Dear Mr. Tom:

On behalf of the Nevada State Office of the Bureau of Land Management (BLM), we are conducting a Native American Consultation Program. This program is in response to the requirements specified in the National Environmental Policy Act (NEPA) regarding preparation of major environmental documents. In this regard, the BLM is interested in identifying concerns that Native Americans may have about the proposed White Pine Power Project (WPPP).

WPPP is a proposed 1,500 megawatt (MW) coal-fueled, steam-electric generating facility to be located in White Pine County, Nevada. The project will be jointly owned by White Pine County and two Nevada utilities: Nevada Power Company and Sierra Pacific Power Company. The Los Angeles Department of Water and Power (LADWP) is serving as the Development Manager for the project and is responsible for selecting a project site and suitable locations for the power transmission, railroad, and water supply systems (referred to as lineal facilities).

Preliminary studies completed in 1979 favorably concluded that there were a number of potential 1,500 MW sites in the County. In 1980, LADWP retained Dames & Moore as the Environmental Consultant to conduct detailed environmental studies in support of the siting effort. Intermountain Research, cultural resources consultant, is assisting Dames & Moore by determining the potential impact WPPP will have on cultural resources in the area.

During the past three years extensive environmental investigations have been in progress to locate environmentally suitable locations for the power plant and lineal facilities.

CULTURAL RESOURCES CONSULTANTS

The potential for environmental impacts and the presence of cultural resources were major criteria used in the selection process. The assessment of cultural resources impacts included:

1. Properties listed in the National Register of Historic Places.

2. Extensive literature search and agency contacts.

3. Archaeological field studies.

The results of the cultural resource assessment, combined with other environmental factors, resulted in the selection of three alternative sites located in North Steptoe Valley, Butte Valley, and Spring Valley. In addition, alternative corridor and route locations for the lineal facilities have been selected.

At this stage in the NEPA process, we are preparing a Draft Environmental Impact Statement (DEIS) for the BLM which will recommend a preferred site from the three sites mentioned above. It is essential to identify concerns that Native Americans may have about WPPP and its potential impact on cultural resources important to them. It is also necessary to determine in what ways lands affected by the project may be held in special regard by Native Americans today.

Part of one proposed alternate power transmission route (Moapa Alternate) traverses a portion of Moapa Reservation lands. It is important to identify concerns the Moapa people will have about this particular project element and it is equally important to determine in what ways the other WPPP affected lands may be held in special regard by Moapa people.

Enclosed are a brochure describing the project and two project maps for your review. Map C-208 shows the locations of the three alternative plant site locations and the proposed railroad routes. The power plant site will cover approximately 2,500 acres when constructed. The width of the railroad right-of-way will be approximately 150 feet. Map C-348 shows the same alternative sites with the proposed power transmission routes. Planned right-of-way width for the transmission lines is 330 feet.

If the Wells Colony people have any concerns for particular cultural resources or for particular kinds of land use that may be affected by the project, we encourage you to submit written comments describing your concerns for presentation in the DEIS. In order to meet the DEIS production schedule, we would appreciate your response by June 15, 1983. If you have any questions, please call us at (702) 847-0411. If you know of

other groups or individuals who may have direct concerns, please send us their mailing addresses so that we can contact them.

Your time and consideration will be well spent. It is important for us all to consider how our endeavors will affect our lives and our land.

Very truly yours,

Cashion Callaway
Administrative Coordinator

CC:DJM:ec

Enclosures: Project Maps (2)
Project Brochure
Response Envelope

March 3, 1849

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
WESTERN NEVADA AGENCY
5533 Mark Twain Avenue
Carson City, NV 89701
(702) 887-3567

IN REPLY REFER TO:

Real Prop. Mgmt.
308 Moapa Res.

November 10, 1982

Department of Water and Power
Attention: Mike Yamada
P. O. Box 111, Room 931
Los Angeles, CA 90051

Gentlemen:

In response to your request of November 9, 1982, there is enclosed for your use, a copy of the map of the Moapa Indian Reservation.

It is requested that the Moapa Tribe and this office be advised, by copies of correspondence, of the status of any rights-of-way contemplated through the reservation.

The address of the Moapa Tribal Council is:

Mr. Preston Tom, Chairman
Moapa Business Council
P. O. Box 56
Moapa, NV 89025

Sincerely,

Robert L Hunter

Robert L. Hunter
Superintendent

Enclosure

MICHAEL YAMADA
NOV 16 1982

INTERMOUNTAIN RESEARCH

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100 MAIN STREET · P. O. BOX 32 · SILVER CITY, NEVADA 89428 · (702) 847-0411

April 11, 1983

Odgers Ranch
South Fork Reservation
(Te-Moak Bands of Western Shoshone)
General Delivery
Lee, Nevada 89829

Attention: Ms. Edna Tybo, Chairperson

Dear Ms. Tybo:

On behalf of the Nevada State Office of the Bureau of Land Management (BLM), we are conducting a Native American Consultation Program. This program is in response to the requirements specified in the National Environmental Policy Act (NEPA) regarding preparation of major environmental documents. In this regard, the BLM is interested in identifying concerns that Native Americans may have about the proposed White Pine Power Project (WPPP).

WPPP is a proposed 1,500 megawatt (MW) coal-fueled, steam-electric generating facility to be located in White Pine County, Nevada. The project will be jointly owned by White Pine County and two Nevada utilities: Nevada Power Company and Sierra Pacific Power Company. The Los Angeles Department of Water and Power (LADWP) is serving as the Development Manager for the project and is responsible for selecting a project site and suitable locations for the power transmission, railroad, and water supply systems (referred to as lineal facilities).

Preliminary studies completed in 1979 favorably concluded that there were a number of potential 1,500 MW sites in the County. In 1980, LADWP retained Dames & Moore as the Environmental Consultant to conduct detailed environmental studies in support of the siting effort. Intermountain Research, cultural resources consultant, is assisting Dames & Moore by determining the potential impact WPPP will have on cultural resources in the area.

During the past three years extensive environmental investigations have been in progress to locate environmentally suitable locations for the power plant and lineal facilities.

The potential for environmental impacts and the presence of cultural resources were major criteria used in the selection process. The assessment of cultural resources impacts included:

1. Properties listed in the National Register of Historic Places.

2. Extensive literature search and agency contacts.

3. Archaeological field studies.

The results of the cultural resource assessment, combined with other environmental factors, resulted in the selection of three alternative sites located in North Steptoe Valley, Butte Valley, and Spring Valley. In addition, alternative corridor and route locations for the lineal facilities have been selected.

At this stage in the NEPA process, we are preparing a Draft Environmental Impact Statement (DEIS) for the BLM which will recommend a preferred site from the three sites mentioned above. It is essential to identify concerns that Native Americans may have about WPPP and its potential impact on cultural resources important to them. It is also necessary to determine in what ways lands affected by the project may be held in special regard by Native Americans today.

A portion of one proposed alternate railroad route (Butte Valley North Corridor) passes close to Odgers Ranch lands. It is important to identify concerns the Shoshone people may have about this particular project element and it is equally important to determine in what ways the other WPPP affected lands may be held in special regard by Shoshone people.

Enclosed are a brochure describing the project and two project maps for your review. Map C-208 shows the locations of the three alternative plant site locations and the proposed railroad routes. The power plant site will cover approximately 2,500 acres when constructed. The width of the railroad right-of-way will be approximately 150 feet. Map C-348 shows the same alternative sites with the proposed power transmission routes. Planned right-of-way width for the transmission lines is 330 feet.

If the Wells Colony people have any concerns for particular cultural resources or for particular kinds of land use that may be affected by the project, we encourage you to submit written comments describing your concerns for presentation in the DEIS. In order to meet the DEIS production schedule, we would appreciate your response by June 15, 1983. If you have any questions, please call us at (702) 847-0411. If you know of

other groups or individuals who may have direct concerns, please send us their mailing addresses so that we can contact them.

Your time and consideration will be well spent. It is important for us all to consider how our endeavors will affect our lives and our land.

Very truly yours,

Cashion Callaway
Administrative Coordinator

CC:DJM:ec

Enclosures: Project Maps (2)
Project Brochure
Response Envelope

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P.O. BOX 25047
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Cultural resources baseline

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